



## Chapter 3

# Expanding Labor Force Opportunities for Every American

Consistent with the robust pace of economic growth in the United States, the labor market is the strongest that it has been in decades, with an unemployment rate that remained under 4 percent for much of 2018. Although this low unemployment rate is a sign of a strong job market, there is a question whether the rapid pace of hiring can continue and whether there are enough remaining potential workers to support continued economic growth. This pessimistic view of the economy's potential overlooks the extent to which the share of prime-age adults who are in the labor market remains below its historical norm. It also fails to capture the extent to which these potential workers could be drawn back into the labor market by increasing worker productivity and wages as well as by correcting labor market distortions from past tax and regulatory policies. This chapter explores trends in employment and wages as well as the positive effects of the Trump Administration's policies on increasing the returns to work and encouraging additional adults to engage in the labor market.

Fundamentally, when people opt to neither work nor look for work it is an indication that the after-tax income they expect to receive in the workforce is below their "reservation wage"—that is, the minimum value they give to time spent on activities outside the formal labor market. For some, this reflects the low wages that they expect to earn through formal work—either because they lack the education and skills desired by employers or because firms lack the physical capital necessary to enhance their productivity. Reskilling programs can prepare these individuals for higher-wage jobs. Similarly, the reduction in corporate income tax rates, the expensing of businesses' investment in

equipment, and the creation of the Opportunity Zones provided by the Tax Cuts and Jobs Act each makes it less costly for firms to invest in the necessary physical capital to increase worker productivity, which results in higher wages. Consistent with strong economic growth, wages continued to increase through 2018, and this wage growth has been particularly strong among the lowest-earning workers. This wage growth has the potential to give more people incentives to begin looking for work.

For others who remain outside the formal labor market, this decision reflects the tax and regulatory distortions that limit the after-tax return that they would receive from formal work. Some regulations, such as occupational licensing, directly raise the costs of entering the labor market and therefore reduce the number of people seeking work. The high cost of child care, in part driven by regulatory and other requirements, provides a disincentive to work in the formal labor market and an incentive to take care of one's own children rather than hire others to do so. This Administration's deregulatory policies have reduced these labor market distortions, thereby drawing some prime-age workers back into the labor market.

This chapter outlines recent labor market trends, both for the adult population as a whole and for key population subgroups. It also considers policies that could further remove government distortions and increase the after-tax return to formal work, thereby increasing work incentives for potential entrants into the labor market. These policies will encourage additional workforce growth and further expansion of the U.S. economy.

**F**or adults (age 16 years and over) who are working or looking for work, the current labor market is among the strongest in recent decades. The economy is in the midst of its longest consecutive streak of monthly job creation in at least 80 years. The national unemployment rate sat at 3.9 percent in December 2018, after reaching a near 50-year low in November. Since 1970, the national unemployment rate has reached a rate below 4 percent during only 13 months, with 8 of these months occurring in 2018. Additionally, for the first time since the Bureau of Labor Statistics (BLS) began tracking job

openings in 2001, there are more job openings than unemployed workers, suggesting that firms still seek to hire more people.

Despite the strong job market and the surplus of open positions, millions of adults are neither employed nor seeking work. Because these individuals are not actively looking for work, they are considered to be out of the labor market and are not counted as unemployed, even though many of them are in their prime working years and could be working. In fact, the share of prime-age (25–54 years) adults who are working remains below the share seen at the peaks of the previous two economic expansions. The availability of these prime-age adults who currently remain outside the labor force creates the potential for continued increases in employment, despite the historically low unemployment rates. Doing so, however, necessitates a better understanding of the reasons these adults are currently not working and the development of economic policies and workforce training opportunities to draw them into the labor market.

A key component of efforts to draw additional workers into the labor market is increasing the potential wages that they could receive. This is because, when jobs are available and plentiful, the decision to remain out of the labor force signals a belief among those individuals that the wage they could receive is below the value they place on their time outside the labor market. Among those who are employed, there is evidence that wages are rising for the typical worker. Real hourly earnings based on the Personal Consumption Expenditures (PCE) Price Index, which is a measure of inflation, rose by 1.5 percent for all workers and by 1.7 percent for nonsupervisory workers. This is the sixth consecutive year of positive real hourly earnings growth for nonsupervisory workers and the longest streak since the eight years of consecutive earnings growth from 1995 through 2002.

Encouragingly, wage growth is accelerating, as real hourly earnings increases for both all workers and for nonsupervisory workers in 2018 exceeded those in either 2016 or 2017. Wage gains in 2018 have also been particularly strong among the lowest-earning workers. These wage gains are an indication that policies designed to increase the productivity of workers, such as the corporate tax rate reductions in the Tax Cuts and Jobs Act, are translating into higher paychecks. But despite these recent improvements, there is still room for further wage growth, both from new policies designed to enhance productivity and from the effects of recent policies to reaching additional workers.

With the dual goals of further growing the workforce and increasing the wages of those who are working, in this chapter we consider labor market trends in recent decades, both for the population as a whole and for key demographic subsets. While recognizing that most adults engage in productive nonwork activities, we also explain how potential distortions caused by taxes and regulations can lead some adults whose most productive use of time is in the formal labor market to instead engage in other activities. Furthermore,

we consider the reasons that the potential wage rates for some workers on the sidelines are below their reservation wages, and what could be done to enhance their productivity and increase their potential after-tax earnings if they entered the labor market. Finally, we discuss this Administration's policies to increase economic opportunities for a diverse range of adults to enable them to engage more fully in the growing economy.<sup>1</sup>

## Long-Run Trends in Adult Employment, Labor Force Participation, and Wage Earnings

What do long-run trends in the labor market tell us about the economy? This section considers these trends, focusing on adult employment, labor force participation, and wage earnings.

### *Employment and Labor Force Participation*

From 1960 through 2001, there was a marked increase in adult (age 16 and older) labor force participation (i.e., the share of all adults who are working or unemployed and looking for work) in the United States (see figure 3-1). Largely driven by more adult women entering the workforce, it rose by over 8 percentage points, from 58.5 percent in March 1960 to 67.1 percent in February 2001.<sup>2</sup> Since 2001, however, the trend in participation rates has reversed and has been in decline. By the end of 2015, the 62.7 percent participation rate was more than 4 percentage points below its 2001 peak. Earlier in 2015, participation rates had reached their lowest since 1977. This decline can only be partially attributed to the Great Recession, as participation rates also fell before the recession from 2001 through 2007 and after the recession from 2009 through 2015. From 2015 through 2018, the participation rate stabilized, and as of December 2018, it remained at 63.1 percent.

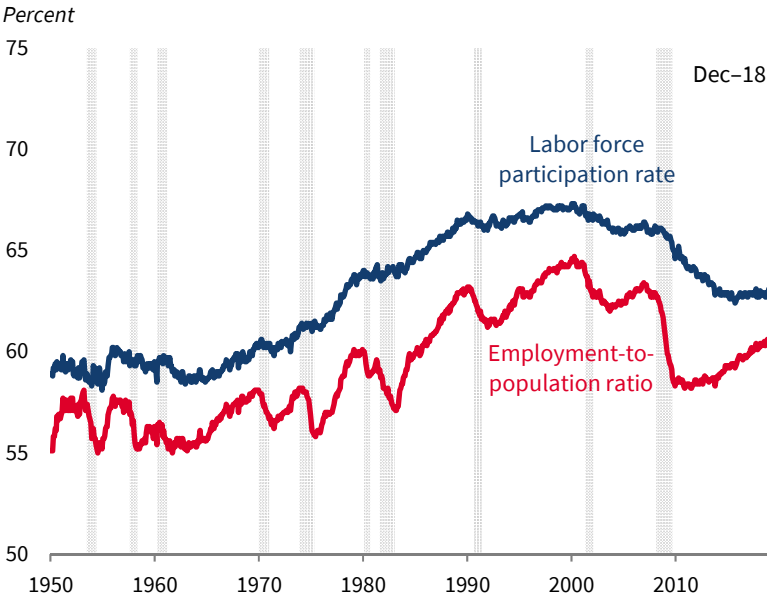
The share of all adults who are working—the employment-to-population ratio—shows a similar long-run pattern, but has additional business cycle volatility because unemployment rises during recessions and falls during expansions. In recent years, as the labor force participation rate has stabilized and the unemployment rate has fallen, the share of all adults who are working has risen. In December 2018, 60.6 percent of adults were working, which is more than 2 percentage points above where it stood seven years ago, in 2011. But it still remains considerably below where it stood at the turn of the 21st century.

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<sup>1</sup> The CEA previously released research on the topics covered in this chapter. The text that follows builds on these research papers produced by the CEA: “Returns on Investments in Recidivism-Reducing Programs” (CEA 2018e); “Addressing America’s Reskilling Challenge” (CEA 2018a); “Military Spouses in the Labor Market” (CEA 2018d); and “How Much Are Workers Getting Paid? A Primer on Wage Measurement” (CEA 2018c).

<sup>2</sup> These dates reflect the final month before the official start of each recession, according to the National Bureau of Economic Research (NBER 2010).

**Figure 3-1. Labor Force Participation Rate and Employment-to-Population Ratio, 1950–2018**

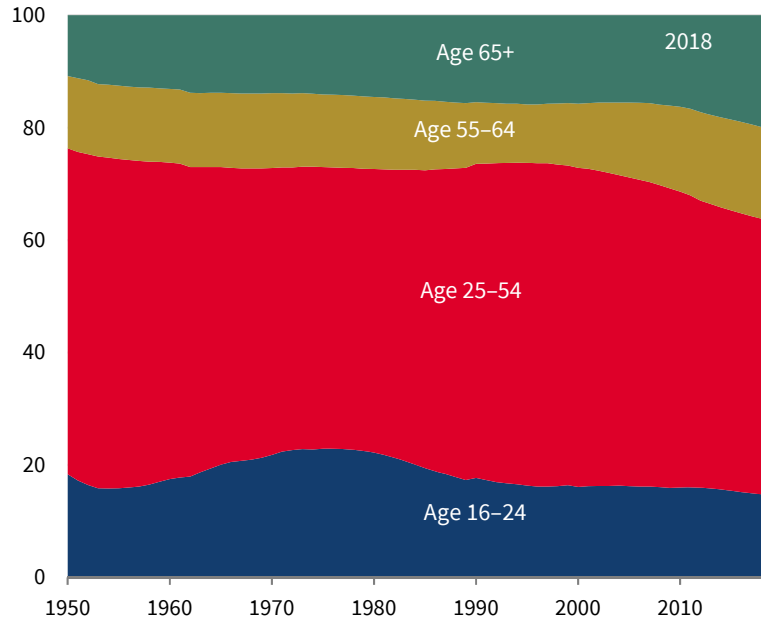


Source: Bureau of Labor Statistics.  
Note: Shading denotes a recession.

In part, the decline in both the labor force participation rate and the employment-to-population ratio since 2001 was to be expected, due to the aging of the population. For over 30 years, from the late 1960s through the late 1990s, the share of the population over age 55 was nearly unchanged, making up between 26 and 28 percent of all adults. But since then, as members of the Baby Boom generation have aged, this stability has dissipated, with those over age 55 growing as a share of all adults. In 2018, more than 35 percent of the adult population was over age 55—with 19 percent over age 65 (see figure 3-2). As those who are of traditional retirement age account for a larger share of the total adult population, participation rates will decline if rates for workers at any given age remain unchanged. The effects of the aging population on overall employment and participation rates have been partially offset by rising participation of those at or near traditional retirement age (see figure 3-3). As discussed in chapter 3 of the *2018 Economic Report of the President*, this increase in participation rates among older adults is partially attributable to improved health statuses relative to earlier cohorts (CEA 2018b). The increase is also consistent with policy changes that reduce the incentives to retire early, including the delayed full retirement age for Social Security and encouraging the use of defined contribution retirement plans, which do not have built-in incentives for early retirement. But even as the most recent cohorts of adults

**Figure 3-2. Adult Population by Age (Years), 1950–2018**

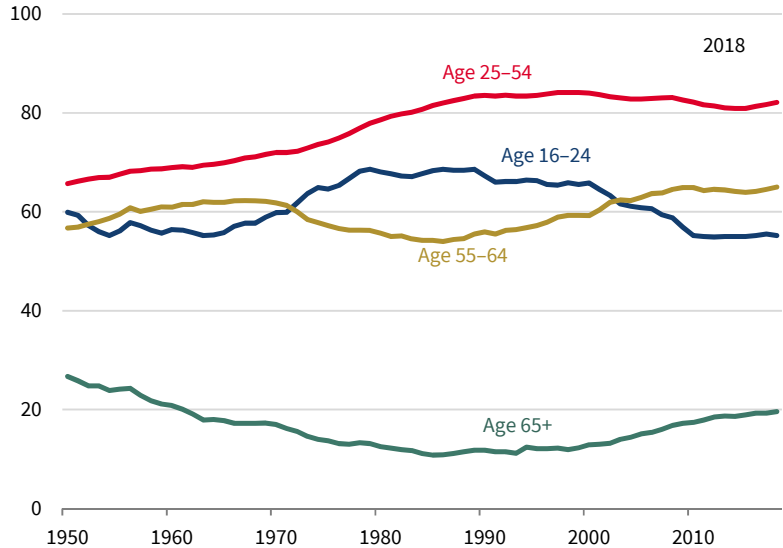
Share of adult population (percent)



Sources: Bureau of Labor Statistics; CEA calculations.

**Figure 3-3. Labor Force Participation Rate by Age, 1950–2018**

Percent



Source: Bureau of Labor Statistics.

reaching older ages are working more than those of similar ages did in the past, those over age 65 still work at substantially lower rates than younger age groups. Hence, the higher-than-traditional participation rates of these older adults are not sufficient to fully offset the loss in participation associated with the aging population.

To separate out the effects of aging, economists often focus on prime-age adults, who are age 25–54 years. This group is of particular importance because they generally are neither in school nor retired. Thus, they represent those adults who are most expected to be working.

Among prime-age adults, labor force participation rates fell from a high of 84.1 percent in 1999 to a 30-year low of 80.9 percent in 2015. This decline in prime-age participation accounted for between 35 and 40 percent of the overall decline in participation over this period—indicating that the falling overall participation rates among the adult population over the past 20 years cannot be attributed to aging alone.

However, the last three years have been more positive with regard to prime-age participation. In both 2016 and 2017, the labor force participation rates of prime-age adults rose by 0.4 percentage point, offsetting some of the declines over the previous 15 years. In 2018, the growth in participation of prime-age adults continued, suggesting that recent progrowth policies are encouraging more businesses to hire and more people to enter the labor force.

Although it is common to consider prime-age employment as a whole, embedded within both the long-term decline in employment rates and improvements over the past few years are diverse population groups with occasionally differing trends. These trends have been markedly different for males and females as well as for married and single individuals, and for those who do and do not have children. Although all races and ethnicities have seen increases in their employment rates in recent years, the relative increases among African Americans and Hispanics have been particularly strong, and the employment rate among working-age adults with a high school degree or less grew faster in 2018 than for those with more education. Although employment in rural areas still lags far behind that in urban areas, recent employment growth in manufacturing and other sectors that are disproportionately located in rural communities offers hope for employment recovery in those communities. To the extent that employment trends differ across population groups or geographies, there is an opportunity to both explore the source of these divergences and to consider targeted policies to address specific challenges and further increase labor market participation, as is done later in this chapter.

## ***Wages and Labor Earnings***

The wages that workers earn in the labor market are of similar importance to employment trends for determining the financial well-being of American

households. Economists have long understood that increases in wages, as well as increases in the demand for labor, are driven by rising worker productivity (Hellerstein, Neumar, and Troske 1999). In a competitive labor market, firms pay workers a wage that is equal to the value of their marginal product. As worker productivity increases, the value of each hour of labor to firms will rise.<sup>3</sup> Consequently, wages will subsequently rise as well, because firms that do not increase their pay will see their workers go to other, higher-paying, firms. Hence, policies that increase workers' skills, such as additional education or training, increase the amount firms are willing to pay for their now-more-productive labor. Policies that increase the amount of capital that workers have at their disposal to produce goods and services will also increase their productivity and, subsequently, increase their wages. For example, because high corporate taxes act as a disincentive for firms to invest in the capital that would make workers more productive, numerous researchers have found that workers bear much of the burden of corporate taxes. Consequently, reductions in the corporate income tax rate lead to increases in the wages paid to workers (Hassett and Mathur 2006; Desai, Foley, and Hines 2007; Felix 2007, 2009). (For a more detailed discussion of this relationship with respect to the Tax Cuts and Jobs Act, see chapter 1.)

Although the BLS and other Federal agencies report several different wage measures, each of which has its own advantages, we focus here on wage trends from the Census Bureau's Current Population Survey (CPS). (For a comparison of the 12 surveys and programs administered by the BLS, with information on pay and benefits, see BLS 2018.) The statistics reported by the BLS using CPS data focus on full-time workers and do not capture the value of fringe benefits and bonuses—whose growth has contributed to total compensation growth among workers in recent decades.<sup>4</sup> They also do not directly capture the changing composition of the workforce, including the education and skill levels of those who are working.<sup>5</sup> In addition, these statistics focus on wages for all working adults (age 16 and older), and not just those of prime working-age. However, these data are particularly useful for understanding the full distribution of wage trends, given that researchers can use them to consider wages at different points in the distribution.

Figure 3-4 shows the trend in nominal wage growth among all adult, full-time workers in the CPS data. In the fourth quarter of 2018, median nominal weekly wages grew by 5.0 percent over the previous year. Under any measure

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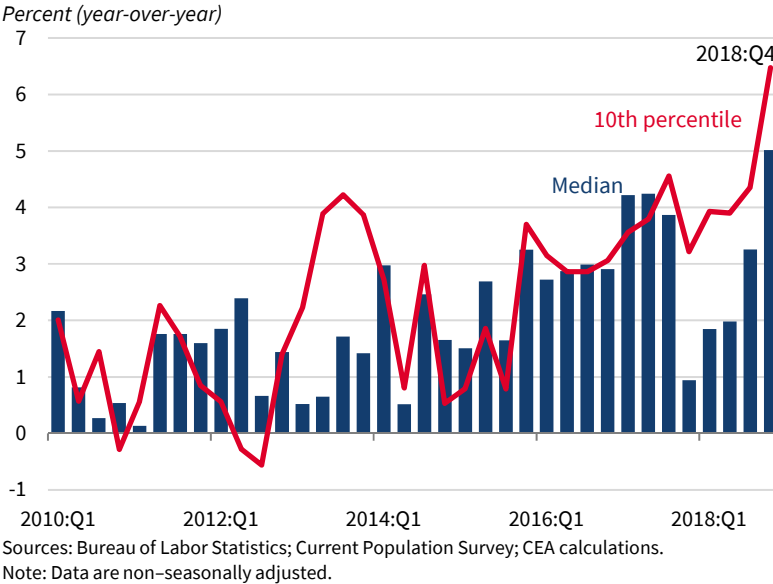
<sup>3</sup> Labor productivity affects wages regardless of whether the labor market is competitive, "monopsonistic," or "monopolistic."

<sup>4</sup> From 1982 through 2018, total compensation growth in the BLS Employment Cost Index grew about 0.3 percent per year faster than wages alone from the same survey.

<sup>5</sup> For a broader discussion of these composition effects, see CEA (2018b). Some researchers, including Daly and Hobijn (2017) and the Federal Reserve Bank of Atlanta (2018), attempt to correct for these composition effects by controlling for worker characteristics or following the same workers over time.



**Figure 3-4. Nominal Weekly Wage Growth Among All Adult Full-Time Wage and Salary Workers, 2010–18**



of inflation, this suggests that real wages are growing. Based on the Consumer Price Index for all Urban Consumers (CPI-U), which the BLS traditionally uses to track inflation, real median weekly wages of full-time workers grew by 2.7 percent from the fourth quarter of 2017 through the fourth quarter of 2018. And on the basis of the Chained Consumer Price Index (Chained CPI), which academics consider a more accurate reflection of cost of living adjustments than the CPI-U and is now used for indexing tax brackets, real median weekly wages of full-time workers grew by 3.0 percent during this time. Moreover, based on the PCE Price Index, which is the inflation measure preferred by the Congressional Budget Office (2018) and the Federal Reserve Board of Governors (2000), real median weekly wages of full time workers grew by 3.1 percent over this time.

In addition, recent wage growth has been the fastest for those at the bottom of the wage distribution. Over the past two years, (from the fourth quarter of 2016 through the fourth quarter of 2018), nominal wages for the 10th percentile of the full-time wage distribution have increased by an annual average of 4.8 percent. Looking just at the past year (from the fourth quarter of 2017 through the fourth quarter of 2018), wage growth at the 10th percentile was an even stronger 6.5 percent. This wage growth at the 10th percentile over the past two years outpaces the 3.0 percent annual growth in median nominal

wages among full-time workers and the 3.5 percent annual growth at the 90th percentile.

The trend under this Administration for wage gains of the full-time wage distribution's 10th percentile to exceed the growth rate for the distribution's middle and top stands in sharp contrast to that seen in the 2001–7 business cycle. During that period, wage growth for the 10th percentile was frequently the slowest of these three measures. Year-over-year wage growth for the 10th percentile only outpaced wage growth for the 90th percentile in six quarters over the six-year period, and even then only did so by more than 0.4 percentage point once. Although the bottom of the distribution has since experienced rapid wage growth, in 2013, this growth followed 2012, when there were nearly no wage increases at the bottom of the distribution, and this growth was not sustained into future years. If the trend under this Administration continues, with the most rapid earnings gains occurring among those lower in the wage distribution, it would be consistent with that seen in the late 1990s, when unemployment was similarly low and the bottom of the distribution also experienced several years of robust wage growth (Ilg and Haugen 2000).

Although the most recent quarter saw the nominal weekly wages at the 10th percentile and at the median of full-time workers grow at their fastest year-over-year pace since at least 2001, some economists question why wage growth has not been faster in recent decades. In addition, given the current strong labor market and low unemployment rate, one could have expected even larger wage gains in recent years.

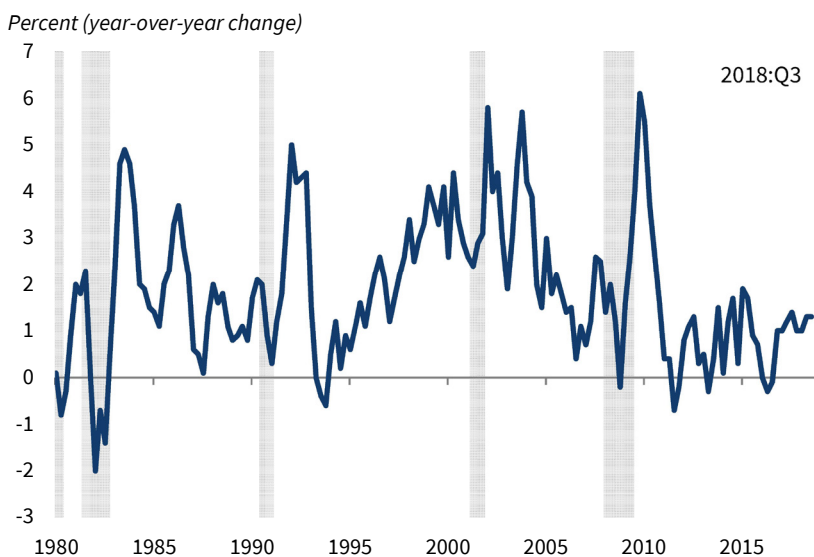
The primary factor in understanding wage growth relates to the productivity growth of workers, given the close link between productivity and wages. During the period from the official end of the Great Recession in June 2009 through the end of 2016, productivity growth averaged just 0.9 percent a year.<sup>6</sup> This is dramatically slower than the productivity growth during the previous two expansions (figure 3-5). During both the 1991–2001 and 2001–7 business cycle expansions, as reported by the National Bureau of Economic Research (NBER), productivity growth exceeded 2 percent a year, on average.

Economists disagree on the long-term potential for high productivity growth. Fernald (2015) notes that a productivity slowdown predated the Great Recession and believes that the period of strong productivity gains in the mid-1990s and early 2000s was the exception. Others, including Yellen (2016), are more optimistic about potential productivity improvements. This view is supported by Borio and others (2015), who found that the credit boom and subsequent financial crisis misallocated labor to sectors with low productivity

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<sup>6</sup> The BLS uses the Implicit Price Deflator when tracking productivity growth. This deflator shows slower productivity growth than the CPI-U, Chained CPI, and PCE inflation indexes. Consequently, research comparing productivity growth with wage growth must have caution in using the same inflation measures. Failing to do so results in an artificial gap between compensation growth and productivity growth (Brill et al. 2017).

**Figure 3-5. Nonfarm Business Sector Real Output per Hour, 1980–2018**

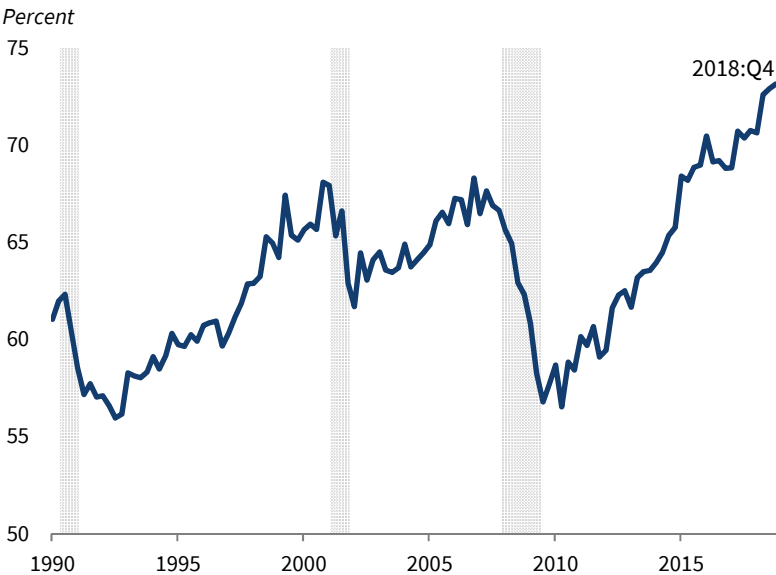


Source: Bureau of Labor Statistics.  
Note: Shading denotes a recession.

growth, suggesting that the recent period of low productivity growth is not reflective of the economy's future potential. Between 2017 and 2018, productivity growth ticked up, averaging 1.3 percent a year through the third quarter of 2018. Although this remains below the productivity gains during previous expansions, these improvements are consistent with the optimistic perspective that there is still a potential for faster productivity growth. Moreover, the changes in the Tax Cuts and Jobs Act intending to boost productivity by encouraging capital investment were just recently enacted, so their full effect on productivity has likely not yet been realized. These changes include the reduction in corporate tax rates discussed in chapter 1 and the creation of Opportunity Zones discussed later in this chapter.

Although productivity growth is the most important driver of wage gains, some economists have also debated nonproductivity factors that affect wage growth. Much of this discussion relates to the bargaining power among workers. One reason for this lack of bargaining power is the possibility that the economy remains in a relatively elastic range of the labor supply curve, meaning that there are still more potential workers who would be willing to work without a substantial increase in the wage rate. Historically, the current low unemployment rate would suggest that firms desiring to hire additional workers would need to increase wages (Leduc and Wilson 2017). However,

**Figure 3-6. Share of Adults Starting Work Who Were Not in the Labor Force Rather Than Unemployed, 1990–2018**



Sources: Bureau of Labor Statistics; Current Population Survey; CEA calculations.  
Note: Shading denotes a recession.

focusing exclusively on the unemployment rate ignores the lower prime-age employment-to-population ratio than in earlier decades as well as the growing share of older workers in good health who could be drawn into the labor market. These potential workers who are not currently in the labor market contribute to the elasticity of the labor supply. For this reason, Ozimek (2017) recently suggested that the ratio of employment to population is more relevant than the unemployment rate for understanding wage growth trends.

In support of this theory, researchers can use CPS data (which track individuals over several months) to observe the prior-month labor force status of those who find employment in any given month. These data include both adults who are starting work for the first time and those who are starting a job after a period of not working. In the fourth quarter of 2018, 73.1 percent of all adults who started working had been out of the labor force in the previous month—compared with just 26.9 percent who had been unemployed (figure 3-6). This is the largest share coming from out of the labor force since tracking of labor flows began in 1990. It suggests that firms are finding workers who are not currently in the labor force and that these adults who are currently out of the labor force remain relevant for understanding both wage growth and the potential for further increases in employment.

An additional hypothesis that some have recently considered for the slower-than-expected wage growth in recent decades is that firms are exercising

monopsony power in the labor market. Under this hypothesis, if the number of firms competing for workers decreases, the remaining firms have increased market power and can depress wages (Webber 2015; Muehlemann, Ryan, and Wolter 2013; Ashenfelter, Farber, and Ransom 2010; Twomey and Monks 2011). Although it does appear that higher industry concentration can result in lower wages, recent research suggests that this has not exacerbated a reduction in wage growth during this period. This is because increases in concentration have not been sufficiently large to play a meaningful role. Bivens, Mishel, and Schmitt (2018) find that increased concentration may have reduced wage growth by just 0.03 percent a year between 1979 and 2014. In addition, recent research by Rinz (2018) observes that when looking at industry concentration measured at a local level where firms are competing for workers, rather than at the national level, industry concentration has actually declined over the past four decades, which is counter to the claims of rising concentration slowing wage growth.

## Prime-Age Employment by Gender

Shifting from considering labor market trends for the entire adult population to those for specific demographic groups, figure 3-7 shows the labor force participation rate and the ratio of employment to population among prime-age men and women over the past 58 years. Individuals who are neither working nor looking for work are out of the labor force. The gap between the participation rate and the employment-to-population ratio reflects unemployed workers, so as unemployment falls, the gap between these two series will decline.

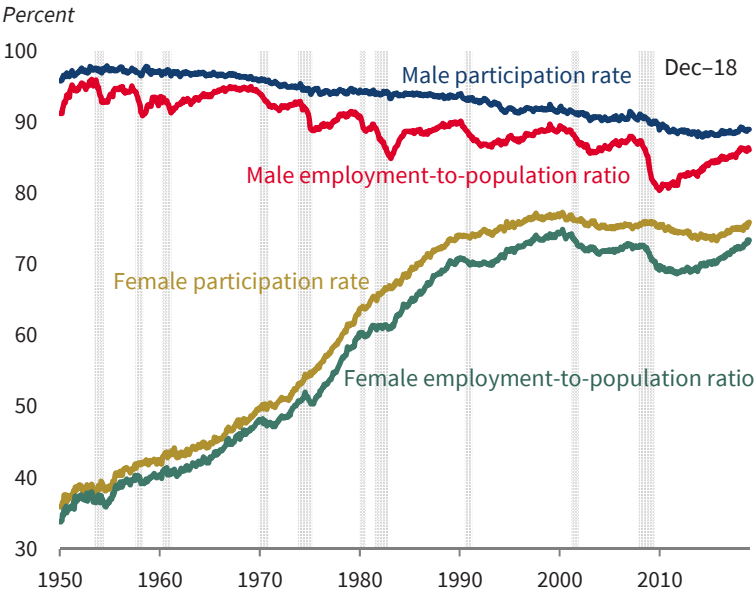
From 1950 until the early 1970s, over 95 percent of males age 25 to 54 were in the labor force every month. In the late 1960s, the combination of a strong labor market and a lack of young males looking for work in the civilian labor market due to the Vietnam War led to historically low unemployment rates. Consequently, in 1968 not only were just over 95 percent of prime-age males in the labor force but nearly 95 percent were working.

Fifty years later, in December 2018, the employment rate for these prime-age males was nearly 10 percentage points lower, as just over 86 percent of these males were employed. This reflects a long-term secular decline in prime-age male employment. Although employment rates rise during economic expansions and fall during recessions, when looking at the peak employment rate across business cycles (based on NBER definitions), the peak employment rate of prime-age males in each business cycle since 1968 has failed to reach the peak achieved in the previous business cycle.<sup>7</sup> During the current expansion, only in 2017 did the employment rate for prime-age males reach the trough of the previous business cycle from 2003.

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<sup>7</sup> Employment in 1989 recovered to above the peak in 1981 between the double-dip recessions. However, it did not reach the 1979 peak before this pair of recessions.

**Figure 3-7. Labor Force Participation Rate and Employment-to-Population Ratio for Prime-Age Adults by Gender, 1950–2018**



Source: Bureau of Labor Statistics.

Notes: Prime-age adults are those age 25–54 years. Shading denotes a recession.

Although the prime-age male labor force participation rate has also fallen over this period, from nearly 95 percent in 1968 to 88.2 percent in December 2015, it appears to have leveled off in the past three years, and was at 89.0 percent in December 2018. As a result of the rising employment rate and flat participation rate for prime-age males since 2015, the gap between these two series (which reflects the share of prime-age males who are unemployed) has declined. If the male participation rates had not stabilized since 2015, the continued growth in male employment that occurred would not have been possible without reaching an even lower rate of unemployment.

Nonetheless, this long-term decline in the employment and labor force participation rates of prime-age males represents a substantial decline in the size of America’s workforce. The gap of 1.1 percentage points between the current prime-age male employment-to-population ratio and that from November 2007 at the peak of the previous business cycle reflects about 700,000 prime-age men who are not working. And the gap of 2.7 percentage points between the current employment-to-population ratio and that from February 2001 at the peak of the previous business cycle reflects 1.7 million prime-age males who are not working. Some of these nonworkers are unemployed, while others remain out of the labor force. Because the number of prime-age males who are out of the labor force exceeds that seen in earlier business cycles,

this represents an opportunity to further increase employment even while the unemployment rate remains near historical lows.

Despite the well-established decline in prime-age male labor force participation rates and employment-to-population ratio over the past 50 years, the precise reasons for the decline remain unclear. One explanation for the recent weakness of male participation rates is the rise in opioid-related disorders (see box 3-1). The longer-term decline is also consistent with patterns finding that employment growth over the past 40 years has been weakest in male-dominated industries, including the decline of manufacturing that was occurring until recent years. Since the late 1960s, over two-thirds of all manufacturing workers have been males, including 72 percent of manufacturing workers in 2018. However, over the course of the 50 years from 1966 to 2016, the number of manufacturing jobs declined by over 5.5 million, despite an increase in total employment of 80 million jobs. Consequently, the share of males working in manufacturing jobs fell from 30 to 12 percent. Similarly, mining and logging as well as construction, whose workforces are each nearly 90 percent male, both saw slower employment growth than the workforce as a whole. However, since the fourth quarter of 2016, employment in manufacturing has increased by 3.6 percent, in construction by 8.5 percent, and in mining and logging employment by 16.1 percent. Each of these exceeds the 3.3 percent growth in total employment over this period.

In considering whether the long-term decline in male employment and labor force participation rates can be reversed, it is useful to look back to the 1960s, which is the last time when the unemployment rate was below 4 percent for a longer consecutive stretch of months than in 2018. The strength of the labor market during that 1960s business cycle resulted in the prime-age male employment rate increasing from peak to peak. No business cycle since then has accomplished this feat. There is some early, limited evidence that the current strong labor market may at least be limiting the continued decline of participation among prime-age males, and perhaps increasing it slightly. In 2018, the average monthly participation rate of prime-age males was up 0.4 percentage point relative to 2017 and up 0.5 percentage point relative to 2016. 2018 was also the fourth consecutive year where the average monthly male prime-age participation rate increased—the first time that this has happened for four consecutive years since at least the 1950s. This indicates that more prime-age males are entering or staying in the labor force.

Standing in sharp contrast to the employment patterns of prime-age males over this period, the labor force participation rates and employment rates of prime-age females, as shown in figure 3-7, rose nearly continuously for nearly 40 years from the late 1950s through the late 1990s. In the early 2000s business cycle, however, the consistent increases abated. The period from 2001 through 2007 saw the first peak-to-peak decline in either female employment or female participation rates in 50 years. Hence, the continued decline in

### **Box 3-1. The Opioid Epidemic and Its Labor Market Effects**

The opioid epidemic that is affecting communities throughout the United States has resulted in a decline in the health of Americans and the health of the economy. Over the past decade, the number of opioid-related deaths in the United States per year has more than doubled, from 19,000 in 2007 to 49,000 in 2017 (NIH 2018). Life expectancy has fallen for the third year in a row, in part due to more frequent opioid and drug overdoses.

This opioid crisis has important economic repercussions. Gherter and Groves (2018) find a correlation between substance use measures and economic measures, including unemployment rates and poverty. Although the Federal Reserve Board of Governors (2018a) does not find a similar correlation with objective economic outcomes, it does observe a correlation between opioid exposure and subjective perceptions of the local economy. The CEA (2017) found that the total cost of the opioid crisis was \$504 billion in 2015; and several researchers, including Krueger (2017), have suggested that opioid usage has exacerbated a decline in labor force participation among prime-age males.

Krueger (2017) notes that 47 percent of prime-age males who are out of the labor force report using pain medication, with almost two-thirds of them using prescription pain medication on a given day. He finds a strong association between county-level opioid prescriptions in 2015 and declines in labor force participation between 2000 and 2015, with opioid prescriptions potentially accounting for a decline of 0.6 percentage point in prime-age male participation during this period. Other recent research has also documented a strong link between opioid prescriptions and lower participation, using more detailed data on prescribing practices or including additional areas or years of data (Aliprantis and Schweitzer 2018; Harris et al. 2018). Although its applicability to the U.S. context is uncertain, Laird and Nielsen (2016) find evidence that such a link may be causal, at least in Denmark. They observe that when people who move their place of residence wind up with a doctor who tends to prescribe more opioids, they are more likely to drop out of the labor force. However, Currie, Jin, and Schnell (2018) do not find evidence that higher rates of prescription opioids reduce participation in the United States. Ultimately, more research is needed to determine what impact illicit opioid use may have on labor market activity. Nonetheless, the strong link suggests that the fatal costs of the opioid epidemic may not capture its full cost to society.

In response, President Trump has mobilized the Administration to confront this crisis. In October 2017, the President declared a national public health emergency, which directed all executive branch agencies to employ every appropriate resource to combat the opioid epidemic (White House 2018b). By enlisting the aid of the executive agencies, the President has expanded access to services while also seeking to limit the availability of prescription and illicit opioids.



In March 2018, President Trump launched the Initiative to Stop Opioid Abuse and Reduce Drug Supply and Demand, which seeks to negate the epidemic through primary prevention, evidence-based treatment, and recovery support services. This includes implementing the Safer Prescribing Plan, which supports State prescription drug monitoring programs, and calls for all federally employed healthcare providers and nearly all federally reimbursed opioid prescriptions to follow best practices within five years. It also targets overprescription and illicit drug supplies by enlisting the Department of Justice to crack down on illegal supply chains in U.S. communities.

With help from Congress, the President has signed into law the SUPPORT for Patients and Communities Act, which is a step forward in fighting the opioid epidemic. This legislation improves access to treatment and recovery services, improves the inspection capabilities of mail-handling facilities to detect controlled substances entering the United States, and authorizes grants to States for their work monitoring substance use. The President and Congress allocated \$6 billion in new funding in the Budget Resolution for 2018 and 2019 to further the fight against the opioid epidemic. With more resources, executive branch agencies are now be able to scale up their efforts to contain the effects of opioid misuse while providing more resources to Americans seeking help and treatment.

By counteracting the damaging health effects of the opioid crisis, the labor market will continue to improve, as more Americans leave the sidelines and enter the workforce. The Administration's commitment to American workers goes beyond a prosperous and booming economy; it also includes encouraging healthy and productive lives.

prime-age male employment rates along with the plateau of prime-age female employment rates resulted in the overall decline in the share of prime-age adults who were working in the early 2000s. More recently, the employment rate of prime-age women, which was 73.4 percent in December 2018, finally surpassed the previous business cycle peak of 72.7 percent. In addition, the labor force participation rate of prime-age women increased, from 73.9 percent in December 2015 to 75.9 percent in December 2018. As a result of the rapid growth in female employment and slower growth in female participation, the gap between these two series (which reflects the share of prime-age females who are unemployed) has declined. As was the case for males, if the female participation rate had not increased since 2015, the continued growth in female employment that occurred would not have been possible without reaching an even lower rate of unemployment.

Nevertheless, female prime-age employment remains more than 10 percentage points below that for prime-age males. This suggests that policies that remove remaining barriers to working have the potential to further increase employment rates among these prime-age females. These include

paid family leave policies discussed in chapter 3 of the 2018 *Economic Report of the President* (CEA 2018b), the transfer program policies discussed in chapter 9 of this *Report* to encourage self-sufficiency among low-income females, as well as the policies we discuss below that target middle-income females who bear the primary responsibility for child care.

## ***Barriers to Work from Child Care Expenses***

One potential reason for lower labor force participation rates among prime-age females than prime-age males is the division of child care and home production responsibilities across genders, especially among families with young children.<sup>8</sup> The relationship between child care responsibilities and employment patterns among females can be seen in figure 3-8, which shows the participation rates among prime-age females based on their marital status and the presence and age of children in the household.

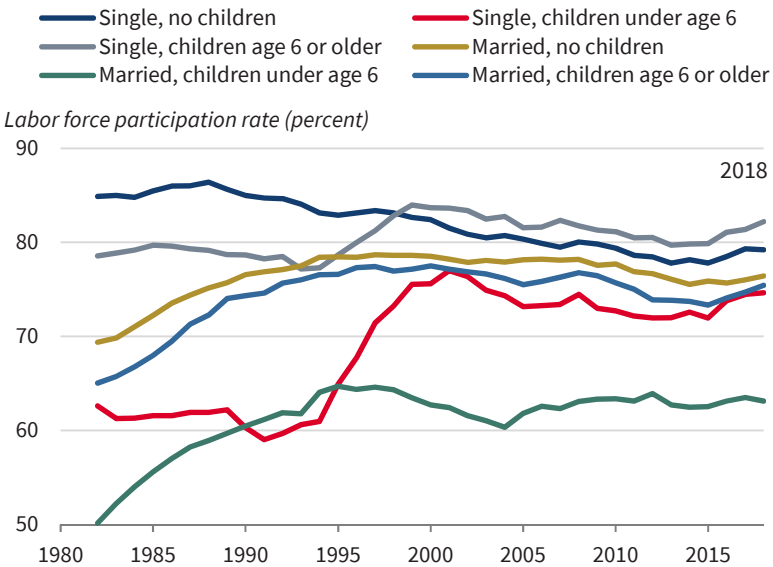
As discussed above, during the 1980s the employment rates and the labor force participation rates of females rose sharply. From figure 3-8, we see that the increase participation in the 1980s came primarily among married females. The participation rates of married mothers of young children under age 6 (the green line), married mothers of older children (the light blue line), and married females without children at home (the yellow line) all increased by at least 7 percentage points over the decade between 1982 and 1992. No similar increases were seen during the 1980s among single females with children (the gray and red lines) or without children (the dark blue line). Consequently, by the early 1990s, the participation rates for mothers of young children were similar across marital statuses, as were the rates for mothers of older children. However, participation rates still differed based on the age of the child, because the rates for both married and single females with young children were substantially below those for females with either no children or older children.

The similarity in levels of labor force participation rates among married and single mothers of young children in the early 1990s was only temporary, however. Starting in the mid-1990s, there was a dramatic increase in the participation rates for single mothers with young children, which rose by over 15 percentage points between 1994 and 2001, while their unemployment rate also declined. As discussed in greater detail in chapter 9, this increase has largely been attributed to the success of social assistance programs and welfare reforms that have brought these single mothers with children into the labor

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<sup>8</sup> An increasing share of fathers also indicate that they are not working because they are taking care of their family. In the March 2018 CPS, 1.6 percent of prime-age fathers of young children (under age 6) said they were not working because they were taking care of their family—up from 0.2 percent in 1989. This trend could be an exacerbating factor in the broader decline in prime-age male employment over this period. Nevertheless, the fewer than 2 percent of prime-age fathers of young children who are not working to take care of their family is far below the 28 percent of prime-age mothers of young children who were not working to take care of their family.

**Figure 3-8. Labor Force Participation Rates Among Prime-Age Females by Marital and Parental Status, 1982–2018**



Sources: Current Population Survey; CEA calculations.

Notes: Data represent an annual average across all months. Data for 2018 are the average through July. Prime-age females are those age 25–54 years.

market (Juhn and Potter 2006; Meyer 2002). Similar increases did not occur among married mothers of young children, whose participation rate reached a plateau in the early 1990s. In contrast to that seen for single mothers, the current 63.1 percent participation rate among married mothers with children under age 6 in 2018 is slightly below where it was in 1994. The participation rates among married mothers of young children is also well below that for all other prime-age females.

Prime-age married females with young children are less likely to be working or looking for paid work than are other married females, and they make up a disproportionately large share of all prime-age married females who are out of the labor force. Although married mothers with young children represent 27 percent (10.1 million / 36.9 million) of all married prime-age females, they make up 37 percent (3.7 million / 10.2 million) of all married prime-age females who are out of the labor force (table 3-1). These married mothers of young children who are out of the labor force are evenly distributed across the educational spectrum, although on average they have somewhat less education than married mothers of young children as a whole. About 35 percent of married mothers of young children who are out of the labor force have a high school degree or less, whereas 39 percent have at least a bachelor’s degree. This

**Table 3-1 Number of Prime-Age Females by Marital and Parental Status, 2018**

Category	Employed (thousands)	Unemployed (thousands)	Not in labor force (thousands)	Total (thousands)
Single, no children	13,249	524	3,610	17,382
Single, children under age 6	2,435	218	901	3,554
Single, children age 6 or older	4,855	258	1,107	6,220
Married, no children	9,695	258	3,068	13,021
Married, children under age 6	6,238	170	3,744	10,152
Married, children age 6 or older	10,110	259	3,379	13,748

Sources: Current Population Survey (CPS); CEA calculations.

Note: Average across monthly CPS data through July 2018. Prime-age females are those age 25–54 years.

compares with 24 percent of all prime-age married mothers of young children who have a high school degree or less.

Supporting this conclusion that child care responsibilities are important for the labor force participation decisions of parents with young children, the Federal Reserve’s “Survey of Household Economics and Decisionmaking” finds that among nondisabled prime-age females age 25–54 who are not working or working part time and have a child in their home under age 6, over 60 percent say that child care plays a role in this decision (Federal Reserve Board of Governors 2018b). Among nondisabled, prime-age females whose youngest child is between the ages of 6 and 12, half of those who are not working and one-third of those working part time say that child care contributed to their decision. This suggests that there remain females who are taking care of children rather than engaging in the formal labor market due to child care responsibilities. However, the survey does not differentiate between child care costs and other reasons that parents of young children may be less likely to pursue formal employment, such as a preference for working at home and investing directly in their children’s well-being.

In some instances, parents opting to engage in child care activities may reflect an efficient allocation of resources if this is a more efficient use of these parents’ time than working in the formal labor market. However, several distortions of the child care market caused by tax and regulatory policies could prevent this from being the case. One such distortion occurs because labor market activities are taxed, whereas time spent on home production activities is not. Consequently, some females may decide that their after-tax wage is too low to

justify formal work, even though they might have chosen formal work if it had not been for the taxes. However, some programs exist to help offset this distortion. For example, the child and dependent care tax credit offsets this distortion by providing a tax credit of 20 to 35 percent of the first \$3,000 of child care expenses for one child (and \$6,000 for two or more children). However, this tax credit will not fully offset the distortion for those whose required expenses for basic child care exceed these amounts.

A second distortion of the child care market occurs because regulation can raise the costs of child care.<sup>9</sup> Although some regulation is necessary for the safety and well-being of children, other regulations and requirements can raise the costs of this care, thereby reducing access to child care and discouraging parents from engaging in formal labor market activities.

According to data from ChildCare Aware of America (2018), the average annual cost of child care nationwide for a four-year-old is about \$9,000, whereas the average annual cost for an infant is about \$11,500.<sup>10</sup> The cost for toddlers typically falls between the higher infant cost and the lower four-year-old cost. For comparison with earnings from employment, these costs can be converted to hourly terms by dividing the cost of full-time care for each State by 2,000 hours (50 weeks multiplied by 40 hours per week). Based on these data, the hourly child care costs for a four-year-old and an infant are respectively about \$4.50 and \$5.75. At the State level, these hourly costs range from \$2.34 for a four-year-old and \$2.65 for an infant in Mississippi to \$9.33 for a four-year-old and \$11.83 for an infant in the District of Columbia.

When considering the net returns to employment and whether to enter the labor market after having a child, these costs can offset any wages earned

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<sup>9</sup> Although this section focuses on the high cost of child care and labor force participation rates, it is also the case that these costs can act as a disincentive to have children. Milligan (2005) and LaLumia, Sallee, and Turner (2015) find small increases in fertility in response to increased child tax benefits, although Crump, Goda, and Mumford (2011) suggest that this response is small and only in the short term, and Baughman and Dickert-Conlin (2009) find no relationship between child-based tax credits and fertility rates among the targeted population. To the extent that fertility decreases as the costs of raising a child increases, high child care costs may also lead some people to forgo having children or to have fewer children. Though increased fertility rates are beneficial for long-run economic growth, exploring the relationship between child care costs and fertility rates is outside the scope of this chapter.

<sup>10</sup> ChildCare Aware of America (2018) offers three separate methodologies for calculating the national average that produces a range of average cost for infants between \$11,314 and \$11,959. These estimates are broadly in line with estimates from other sources. In 2015, the National Survey of Early Care and Education found that the price for center-based child care for an infant was \$4.40 an hour at the median and \$7.80 an hour on average (HHS 2015). For 40 hours per week of care year round, this reflects \$9,152 (median) to \$16,224 (mean) of expenses for the year. A separate survey of parents by Care (2018) found that the average cost of infant care paid by parents was \$211 per week, or \$10,972 for a year. Knop and Mohanty (2018) found in the 2014 Survey of Income and Program Participation that working mothers who paid for child care and whose youngest child is under age 6 paid an average of \$240 per week on child care for all their children, although their analysis of the 2014 CPS found lower estimates.

through employment. Figure 3-9 therefore shows the average hourly cost for center-based child care for four-year-old children and infants in each State as a share of the median before-tax hourly wage in the State. In every State, the hourly cost of care for one young child represents at least 15 percent of the median hourly wage in the State. Parents with two or more young children in child care will have a larger financial burden. Similarly, lower-income adults may also pay a larger share on child care if they are unable to find lower-cost providers (see chapter 9 for a discussion of work and child care decisions for lower-income adults who are potentially eligible for welfare programs). Across all States, the hourly cost of child care for a single four-year-old is on average 24 percent of the State median wage, while the cost of child care for an infant is 30 percent of the State median wage. Including commuting times, when a child is with a paid caretaker but his or her parent is not paid for working, the financial burden is even greater.<sup>11</sup>

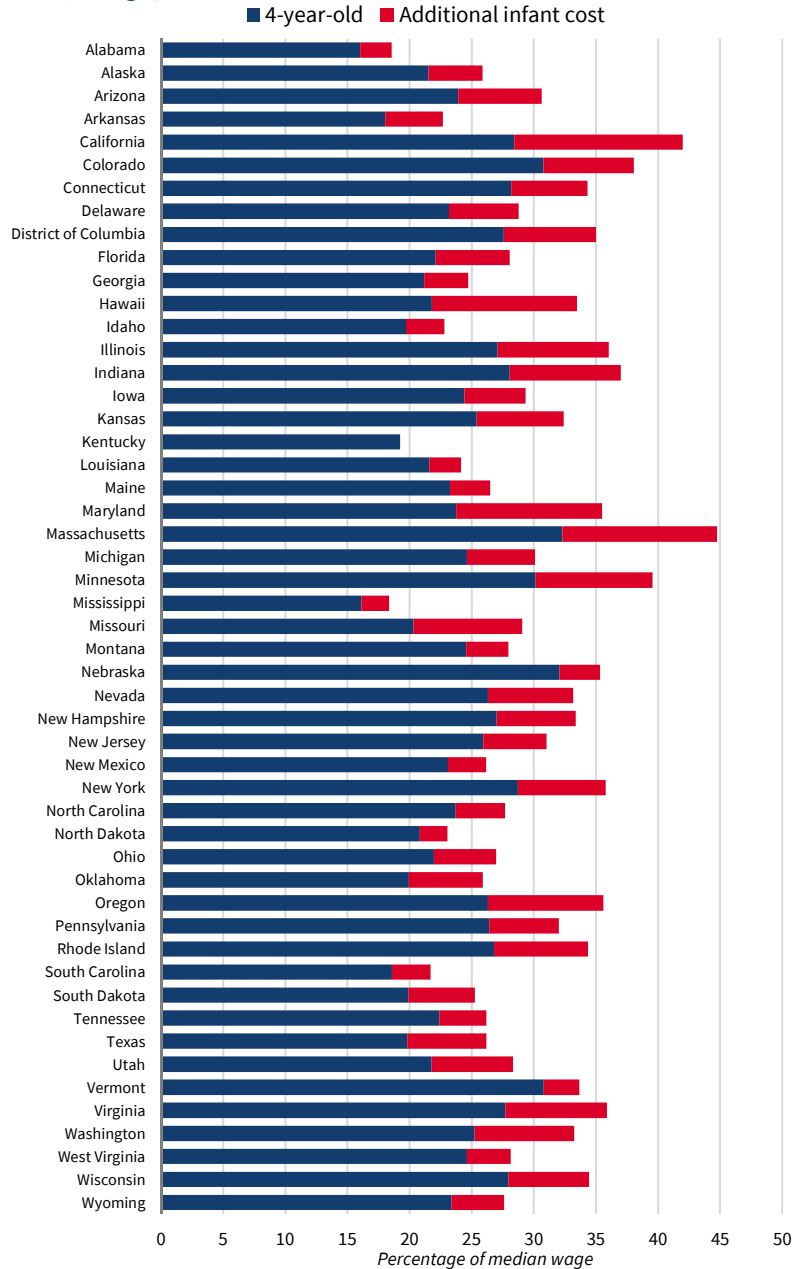
Given that a decrease in the cost of child care essentially means an increase in the effective wage rate for those who use child care to go to work, one way to determine the potential labor supply response to a reduction in the cost of child care is by considering estimates of the response of labor supply decisions to wages. If work increases when wages go up, then work should also increase when child care costs go down. Based on their extensive literature review, McClelland and Mok (2012) conclude that for every 1 percent increase in the wage rate, there is a 0.1 percent increase in the number of people who work, and a 0.1 percent increase in hours worked among those who were already working.<sup>12</sup> For workers (or potential workers) earning \$20 an hour facing child care costs of \$5 an hour (about the national average cost for one child in center-based care), a 20 percent decrease in child care costs (from \$5 to \$4) would increase the effective wage by 7 percent. For workers (or potential workers) earning \$20 an hour with two children in child care, the effective wage would rise by 20 percent (from \$10 an hour, after \$10 an hour of child care costs, to \$12 an hour after including the now-reduced child care costs). Applying the labor supply elasticities from McClelland and Mok (2012), a 7 percent increase in the effective wage would increase the number of workers and hours worked among current workers by 0.7 percent each. A 20 percent increase in the effective wage would lead to an increase of 2 percent each. However, such calculations are only illustrative, because they do not account for the actual hours of child care purchased relative to hours worked, the number of children each family has in child care, or the wage distribution of people who might use child care. McClelland and Mok (2012) also conclude from their

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<sup>11</sup> Based on data from the American Community Survey, workers who commute 5 days a week spend an average of about 4 hours a week commuting to and from work.

<sup>12</sup> McClelland and Mok (2012) report a range of 0 to 0.2 for both the elasticity with regard to the decision to work and the decision regarding how many hours to work. Here we use the middle value of 0.1.

**Figure 3-9. Child Care Costs as a Percentage of States' Median Hourly Wage, 2017**



Sources: ChildCare Aware of America (2018); Bureau of Labor Statistics; CEA calculations.  
 Notes: Child care costs per hour are obtained by dividing the cost of full-time, center-based child care for 4-year-olds by 2,000 hours. Montana's child care costs are for 2016. Infant care costs are not available for South Dakota, so these costs are computed as the toddler care costs scaled up by the national average percent difference between costs for infant and toddler care.

literature review that the labor supply elasticity of married females (about 0.2) is larger than that for unmarried females (about 0.05), suggesting that married females are more likely to respond to reductions in the cost of child care.<sup>13</sup>

An alternative way to assess the potential responsiveness of work to reductions in child care costs is to consider studies that explicitly test how previous reductions in child care costs affected work. Fortunately, a number of studies have explored this question. Baker, Gruber, and Milligan (2008) study a policy in Quebec that gradually provided new child care subsidies requiring parents to pay at most \$5 a day for each child age four and under, regardless of family income. They find that child care subsidies increased the use of care by almost 15 percentage points, and increased labor force participation among mothers by close to 8 percentage points. Lefebvre and Merrigan (2008) find similar effects of Quebec's child care subsidies; and Lefebvre, Merrigan, and Verstraete (2009) find that these effects persist in the medium and long terms. Herbst (2017) uses historical U.S. data to estimate the impact of the Lanham Act of 1940, which provided child care funding to U.S. communities in response to the deployment of many males to World War II. He finds substantial effects on the labor supply of women in the 1950 and 1960 Census years. Outside North America, studies looking at Spain and Norway find mixed effects of child care subsidies on maternal employment (e.g., Havnes and Mogstad 2011; Nollenberger and Rodríguez-Planas 2015). In a review of the literature on the effects of child care costs on maternal labor supply, Morrissey (2017) concludes that a 10 percent decrease in costs increases employment among mothers by about 0.5 to 2.5 percent.

Altogether, the empirical evidence on the responsiveness of labor supply decisions to wages in general and to child care costs more specifically suggests that a reduction in the cost of care could lead to increases in the number of people who participate in the workforce and also the number of hours worked among current workers. This is consistent with responses from survey data showing that child care costs are an important barrier to work or to additional work.<sup>14</sup>

## ***Policies to Reduce Barriers to Work Resulting from Child Care Expenses***

In considering potential policies to reduce the barriers to work from child care expenses among married mothers, it is useful to first consider how existing

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<sup>13</sup> McClelland and Mok (2012) report a labor supply elasticity range of 0 to 0.3 for married women and 0 to 0.1 for men and single women.

<sup>14</sup> Although we focus in this chapter on the labor supply effects of child care, the effect on child outcomes are also an important consideration. Here the effects of child care subsidies are mixed, with Herbst and Tekin (2016) finding that children receiving subsidized early child care score lower on cognitive ability tests in kindergarten and Havnes and Mogstad (2011) finding that subsidized care had strong positive effects on children's educational attainment and labor market outcomes.



policies may result in the divergent employment outcomes for single and married mothers of young children discussed above. Some programs focus on reducing employment disincentives among both single and married parents. These include the child and dependent care tax credit, which provides a tax credit for a portion of child care costs when working; the child care development fund, which provides assistance through block grants for people attending job training or educational programs; and dependent care flexible spending accounts, which allow parents to pay for child care expenses using pretax dollars.

Nevertheless, as discussed in greater detail in chapter 9, many of the public policies targeted at increasing employment in the 1990s were focused on families living in poverty, often without a worker in the family. These included the Earned Income Tax Credit (EITC), which provides substantial incentives to enter the labor market for single parents and parents without a working spouse. Hence, the EITC effectively increases the average hourly compensation of low- and middle-income parents who are entering the workforce, as long as there is no other working parent in the family, which can offset these child care expenses.

However, among married women with a working spouse, the EITC typically has either no effect or a negative effect on after-tax hourly wages. This is because policymakers structured the EITC to incentivize work among low-income individuals who would represent the first worker in a family, rather than encouraging both parents to work. For example, consider the EITC that a married couple with two children with at least one full-time worker receives (table 3-2). The maximum EITC benefits of \$5,716 is reached with just one full-time, year-round worker making the federal minimum wage (\$7.25 per hour) in the family; and if this worker makes \$15 per hour, the couple will be in the phase-out region of EITC benefits without any earnings from the second parent. This means that once one family member is working full time, adding a second worker to the family cannot increase EITC benefits and will frequently result in a reduction of these benefits.

Without the offsetting EITC benefits, the combination of child care expenses and tax liabilities can offset nearly all the financial benefits from work, even for relatively well-paid workers. Consider a married mother with one child whose spouse earns \$20 per hour and who is considering starting to work full time herself at an hourly wage of \$20. If her child requires care that costs \$5 per hour each, these expenses would offset 25 percent of her pretax hourly wage. Based on the Urban Institute's (2012) "Net Income Change Calculator"—which incorporates any Federal, State, local, and payroll tax liabilities—the combined expenses from child care and taxes could constitute half of her pretax wages. If she had two children that require care, the combination of additional taxes and child care expenses could represent about three-fourths of her pretax wages. These substantial child care expenses act as a similar burden for a single

**Table 3-2. EITC Benefits for a Married Couple with Two Children, Based on the Additional Earnings from a Second Full-Time Worker, 2018**

First full-time worker's hourly wage (dollars)	Second full-time worker's hourly wage (dollars)				
	0.00	7.25	10.00	15.00	20.00
7.25	5,716	4,737	3,578	1,472	–
10.00	5,716	3,578	2,420	314	–
15.00	4,526	1,472	314	–	–
20.00	2,420	–	–	–	–
25.00	314	–	–	–	–

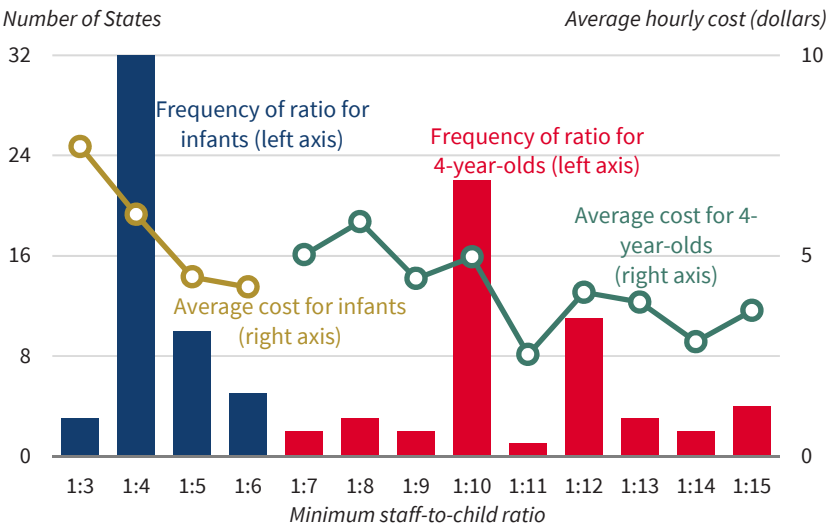
Sources: Internal Revenue Code; Internal Revenue Service (2018); CEA calculations.  
Note: EITC=Earned Income Tax Credit. Assumes both workers are working full-time, year-round (40 hours per week and 50 weeks per year). The maximum possible EITC benefits that a parent of two children can receive is \$5,716.

female considering work, but the additional EITC benefits for which she qualifies through work will partially offset these expenses associated with entering the labor market.

One way to reduce the financial burdens of child care for both single and married females considering working is to reduce the direct costs of care. Given the high costs of care relative to wages, it is important to consider how government policies may drive up these costs. Regulations that impose minimum standards on providers can decrease the availability and increase the cost of obtaining care, thus serving as a disincentive to work.

Because staff costs constitute the majority of child care costs, regulations that constrain the number, characteristics, and required activities of staff members can greatly affect costs (National Center on Early Childhood Quality Assurance 2015). Although States differ on which facilities are exempt from licensing requirements, all States license child care facilities and require a minimum ratio of staff members to children (for details on licensing regulations and exemptions from these requirements, see HHS 2014). For 11-month-old children, minimum staff-to-child ratios ranged from 1:3 in Kansas to 1:6 in Arkansas, Georgia, Louisiana, Nevada, and New Mexico in 2014. For 35-month-old children, they ranged from 1:4 in the District of Columbia to 1:12 in Louisiana. For 59-month-old children, they ranged from 1:7 in New York and North Dakota to 1:15 in Florida, Georgia, North Carolina, and Texas. Assuming an average hourly wage of \$15 for staff members (inclusive of benefits and payroll taxes paid by the employer), the minimum cost for staff per child per hour would range from \$2.50 in the most lenient State to \$5 in the most stringent State for 11-month-old children, from \$1.25 to \$3.75 for 35-month old-children, and from \$1.00 to \$2.14 for 59 month-old children. Figure 3-10 shows the distribution of States over minimum staff-to-child ratios, as well as the average

**Figure 3-10. Number of States and Average Center-Based Child Care Cost by Minimum Staff-to-Child Ratio and Age Group**



Sources: Childcare Aware of America; Early Childhood Training and Technical Assistance System.  
Note: Infants are up to 11 months for maximum staff ratios and 12 months for average annual cost. Maximum ratio data are for 2014. Annual cost data are for 2017.

hourly cost of center-based care in each State. For both infants and 4-year-old children, costs tend to fall as fewer staff members are required. Of course, minimum ratios are likely correlated with other State-level factors that determine costs, including demand from residents for different quality levels of child care. Still, these ratios may be binding constraints for many families, especially for low- to moderate-income families in States with high minimum ratios.

In addition to the number of staff members required, the wages they are paid add to the overall cost of child care. Wages are based on the local labor market demand for the employees’ skills and qualifications, as well as the availability of workers in the field. Regulations that require higher-level degrees or other qualifications drive up the wages required to hire and retain staff, increasing the cost of child care. Though recognizing that some facilities are exempt from these requirements, all States set requirements for minimum ages and qualifications of staff, including some that require a bachelor’s degree for lead child care teachers. Other staff-related regulations that can drive up costs include required background checks and training requirements. In addition to standards regarding staff, many States set minimum requirements for buildings and facilities, including regulating the types and frequency of environmental inspections and the availability of indoor and outdoor space.

Also, most States set a maximum number of children who can be included in a given care group, which can require additional building space.

These regulations are often beneficial for the health and safety of the children (Hotz and Xiao 2011). To the extent that these regulations increase safety and reduce injuries in child care settings, they have measurable societal benefits. Nevertheless, some regulations likely have little effect on children's well-being or the quality of care being provided while acting as a barrier to entry that can limit competition and increase prices (Gorry and Thomas 2017). As discussed later in this chapter, this concern exists for a range of licensed occupations in addition to child care workers.

Consistent with this concern, research generally finds that child care regulations increase the cost and reduce the supply of care options. Hotz and Xiao (2011) study how changes in regulations over time affect the number of center-based care establishments. They estimate that decreasing the maximum number of infants per staff member by one (thereby increasing the minimum staff-to-child ratio) decreases the number of center-based care establishments by about 10 percent. Also, each additional year of education required of center directors decreases the supply of care centers by about 3.5 percent. Similarly, Currie and Hotz (2004) find that when States adopt more stringent education requirements for child care center directors, increase minimum staff-to-child ratios, and require more frequent inspections, the number of children enrolled in center-based care falls. Other studies focus on variation in regulations at a point in time within States across age groups—for example, determining whether States with relatively more stringent regulations for four-year-old children than infants have relatively higher costs of care for four-year-old children compared with infant care. With this approach, Blau (2007) finds that tighter regulations do not necessarily increase costs, while Gorry and Thomas (2017) find some evidence that they do increase costs.

Ultimately, the regulation of child care is designed to increase the quality of care provided to children. These quality improvements may benefit children who remain in care, but they may also increase the costs paid by parents beyond their willingness or ability to pay. Evidence for this can be seen in the shift away from center-based care and toward family care providers (also known as home-based care) after regulations on care centers are increased (Hotz and Xiao 2011). These family care providers, where children are cared for in the provider's home rather than at a center, are typically subject to less regulation and offer care at a lower cost than at a center. The National Survey of Early Care and Education found that the median cost of home-based infant care was 28 percent below that for center-based care and 19 percent lower for a four-year-old (HHS 2015). For some parents, family care centers reflect a more cost-effective way to obtain care and may offer a preferred environment for the children or greater convenience for the parent. However, to the extent that regulations are shifting more parents from center-based to home-based

care, this may indicate that regulations are distorting the market and parents are not willing or able to pay for the resulting higher costs. Furthermore, regulations designed to increase the average quality of care may not do so if parents forgo the more tightly regulated market as a result.

In addition, regulations designed to increase the quality of child care centers may not actually do so if centers respond by reducing other inputs, such as teacher training, that also affect quality (Blau 2007). Thus, by loosening regulations that do not substantially affect the safety or quality of care, States may be able to reduce the cost of formal child care and increase parental work effort.

## **Prime-Age Employment by Race, Ethnicity, and Education**

A key concern in evaluating the economy and the labor market is the extent to which certain demographic groups are consistently left behind. In particular, black and Hispanic employment rates have consistently fallen short of those of whites. This is apparent in figure 3-11, which shows the prime-age ratio of employment to population by race. To reduce the noise in the series, we use quarterly average employment rates. Since this series began in 1994, the white prime-age employment rate has consistently been at least 4 percentage points above that for blacks, and at least 3 percentage points above that for Hispanics.

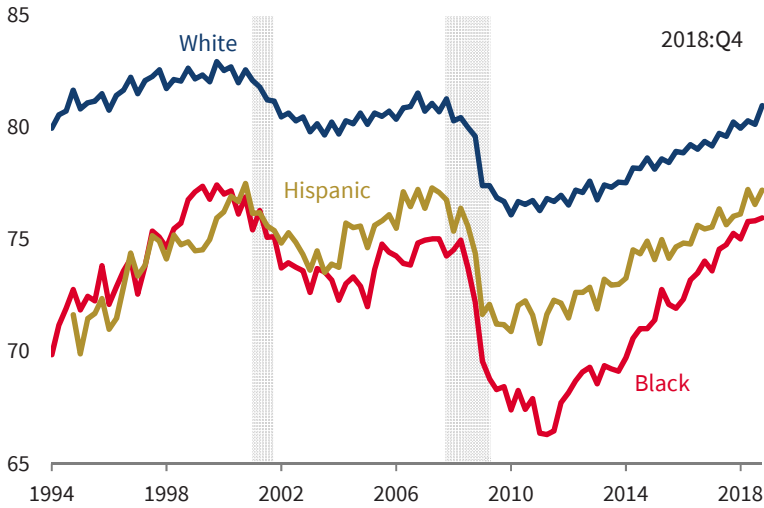
Although there is further progress to be made in closing the racial and ethnic employment gaps, it is apparent that the economic growth during the current business cycle is having the largest positive effect on the employment of blacks and Hispanics. The average difference of 4.6 percentage points between the prime-age employment rates of blacks and whites in 2018 and of 3.5 percent between Hispanics and whites are each the smallest annual gaps ever recorded since the BLS began publishing prime-age employment-to-population ratios by race in 1994.

Although prime-age employment-to-population ratios are not available by race before 1994, prime-age labor force participation rates are available for earlier years (see figure 3-12). The gaps in participation rates across races and ethnicities have not closed as rapidly as have employment-to-population ratios, as figure 3-11 shows. This is because unemployment rates for prime-age blacks and Hispanics have both declined more rapidly than the unemployment rate declined for whites. Nevertheless, the average gap of 2.6 percentage points in prime-age participation rates between whites and blacks in both 2017 and 2018 were the smallest since 1983. As discussed in box 3-2, the current disparity in employment and participation rates between white and black prime-age adults is almost completely attributable to a racial employment gap among males rather than females.

Similar results are apparent when considering the recent trends in prime-age employment-to-population ratios by education level, because those with

**Figure 3–11. Employment-to-Population Ratio for Prime-Age Adults by Race, 1994–2018**

Percent (non-seasonally adjusted)

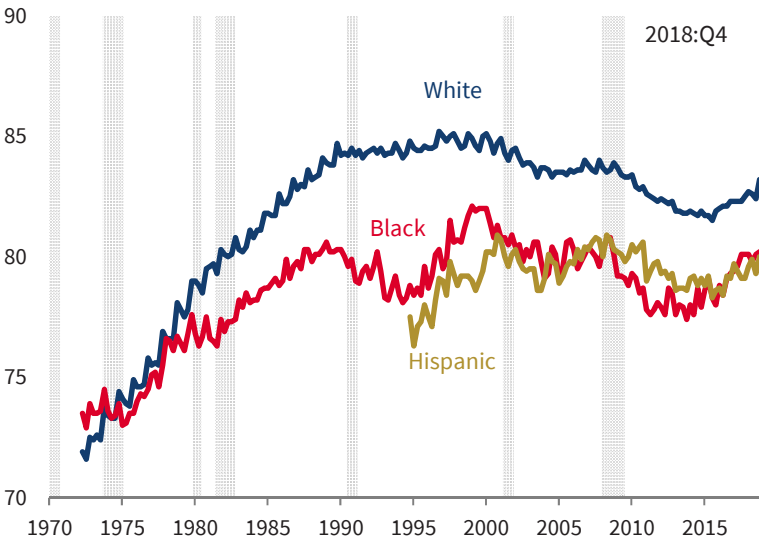


Source: Bureau of Labor Statistics.

Note: Prime-age adults are those age 25–54 years. The series for Hispanics starts in 1994:Q4. The BLS does not publish prime-age employment-to-population ratios for any race before 1994. Shading denotes a recession.

**Figure 3–12. Labor Force Participation Rate for Prime-Age Adults by Race, 1972–2018**

Percent (non-seasonally adjusted)



Source: Bureau of Labor Statistics.

Note: Prime-age adults are those age 25–54 years. The series for Hispanics starts in 1994:Q4. Shading denotes a recession.

### Box 3-2. Employment Rates among Black Men

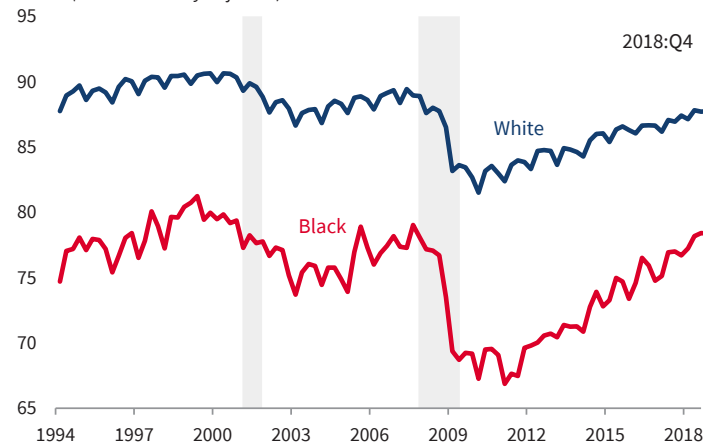
The ratio of employment to population is an important measure of the share of the civilian noninstitutional population who are employed and allows us to combine information from both the labor force participation and unemployment rates. As figures 3-i and 3-ii show, there has historically been a wide gap in employment rates between black and white prime-age adults.

However, a notable aspect of this disparity in employment rates is that it currently appears to be driven primarily by the employment disparity for males across the two races, rather than females. For instance, while the employment-to-population ratio for prime-age white males in the fourth quarter of 2018 was 87.7 percent, for prime-age black males it was 9.4 percentage points lower, at 78.4 percent. For females, conversely, the prime-age employment-to-population ratio had been higher for black females than white females from September 2016 until the fourth quarter of 2018. In the fourth quarter of 2018, the prime-age employment-to-population ratio for black females was within 0.3 percentage point of that for white females.

Numerous researchers have explored the black/white employment disparity, trying to better understand the factors driving this gap. This research suggests that the employment gap results from multiple sources (Bound and Freeman 1992), with common explanations including differences in education or skills (Wilson 2015; Moss and Tilly 1996; Neal and Johnson 1996), labor mar-

**Figure 3-i. Employment-to-Population Ratio for Prime-Age Males by Race, 1994–2018**

Percent (non-seasonally adjusted)

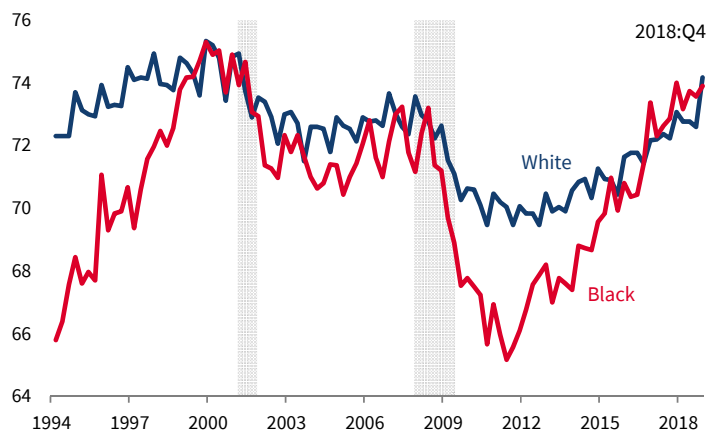


Source: Bureau of Labor Statistics.

Note: Prime-age males are those age 25–54 years. Shading denotes a recession.

**Figure 3-ii. Employment-to-Population Ratio for Prime-Age Females by Race, 1994–2018**

Percent (non-seasonally adjusted)



Source: Bureau of Labor Statistics.

Note: Prime-age females are those age 25–54 years. Data are non-seasonally adjusted. Shading denotes a recession.

ket discrimination (Bertrand and Mullainathan 2004; Darity and Mason 1998; Shulman 1987), and the “first fired, last hired” phenomenon, which asserts black workers are hit much harder by recessions and take a longer time to recover from economic downturns, as noted by Couch and Frailie (2010) and Weller (2011). (Couch and Fairlie observe, however, that the decline in unemployment late in a business cycle comes more from a reduction in the rate of job losses rather than actually being the last hired.) Especially because the racial disparity is driven by male, rather than female, employment, an additional explanation is the lasting effects of higher incarceration rates among black males (Western and Pettit 2000, 2005; Holzer, Offner, and Sorensen 2005; Pager, Western, and Sugie 2009; Neal and Rick 2014).

In 2016, close to 70 percent of people incarcerated were racial or ethnic minorities, with over one-third being black (Carson 2018). Black males are six times more likely to be incarcerated than white males (figure 3-iii). According to the Sentencing Project (2018), about 1 in 12 black males in their 30s is in prison or jail every day. Those who are incarcerated are not included in employment statistics; but if those with a criminal record are less likely to find employment after their release, these high incarceration rates could exacerbate the lower employment rates among black males.

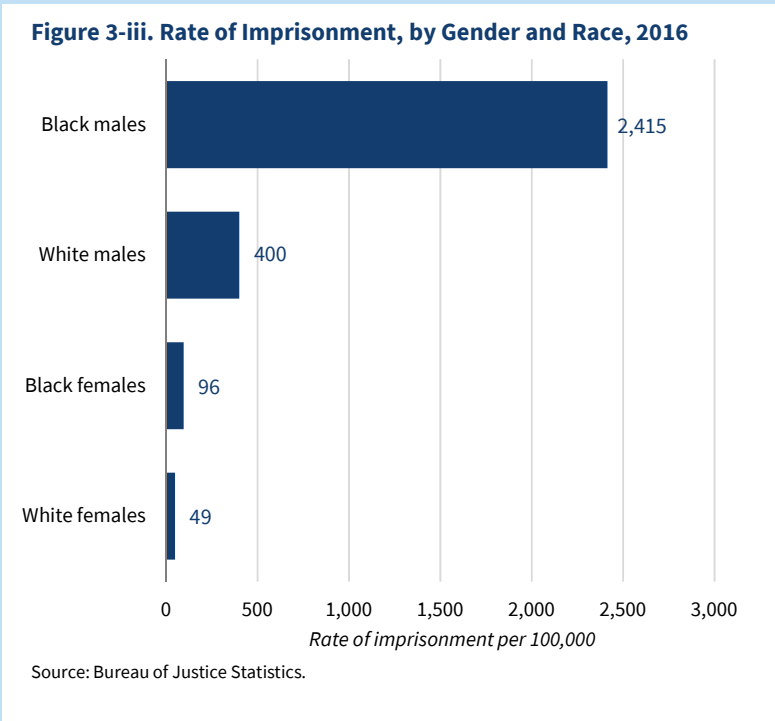
Previous research has found that this is the case. Bhuller and others (2016) find that spending time in prison has a negative effect on employment outcomes after release. They assert that incarceration may result in depreci-



ated human capital and limit employment opportunities due to societal stigma. Western and Pettit (2000) observe that individuals with criminal records have significantly fewer employment opportunities and lower earnings. They go on to say that it is impossible to truly understand patterns of employment without also considering incarceration rates.

Criminal justice reform has been a leading priority of the Trump Administration. In March 2018, the President issued an Executive Order (White House 2018a) that would bring numerous Federal agencies together, helping to identify ways to improve the reentry of formerly incarcerated individuals into the labor force, in addition to reducing recidivism and improving public safety overall. The Administration has also worked with Congress to pass the FIRST STEP Act, which the President signed into law on December 21, 2018. This legislation will help strengthen reentry programs for federal prison inmates while reducing recidivism. For further discussion on recidivism reducing programs in the United States see the 2018 report released by the CEA (2018d).

The Trump Administration has also emphasized policies that further the period of economic growth, recognizing that the “first fired, last hired” phenomenon suggests that the black workers who are less likely to find work early in economic expansions disproportionately benefit from extended periods of hiring. Consistent with this philosophy, the disparity in the black and



white employment-to-population ratios has been steadily declining. In 2018, the average black/white employment gap among prime-age adults reached 4.6 percentage points, a historical low since BLS began publishing prime-age employment-to-population ratios by race in 1994. Among individuals of all ages, the average gap in 2018 was an even lower, at 2.4 percentage points, also representing a historical low.

less education who traditionally were the least likely to be working have made the greatest gains in employment over the past two years. In the fourth quarter of 2016, 86.2 percent of prime-age adults with at least a bachelor's degree were employed, relative to 69.5 percent of those with a high school degree or less (figure 3-13). But since the end of 2016, gains in prime-age employment have been most prevalent among those with less education. As of the third quarter of 2018, the employment rate of those with a bachelor's degree is essentially unchanged, falling by 0.1 percentage point, while the employment rate for those with a high school degree or less has risen by 2.3 percentage points and the employment rate for those with some college, but no bachelor's degree, has risen by 0.4 percentage point.

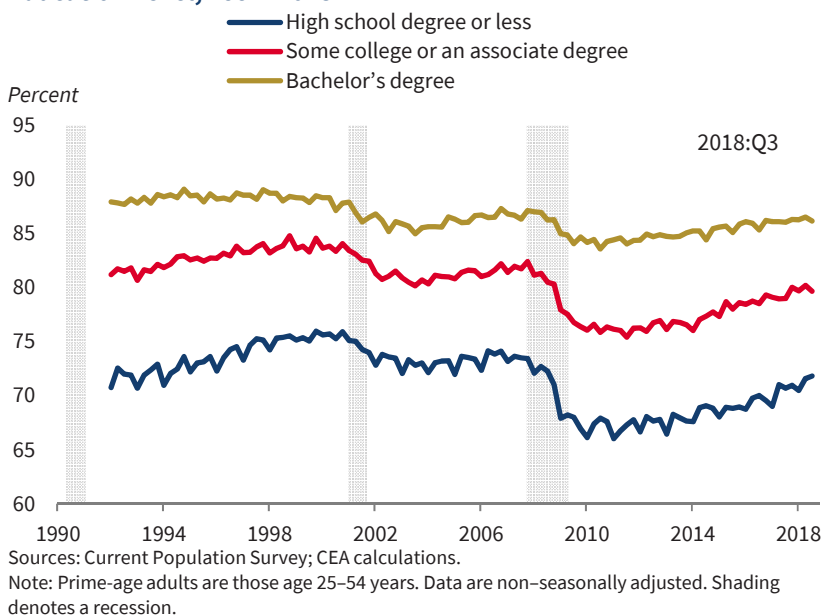
The relative rise in employment rates for those with less education and the rise among prime-age black adults mirror the rises from the latter years of the late 1990s business cycle, when there were notable increases in employment rates among these groups. This is consistent with research that lower-skilled and marginalized workers are often hit hardest during economic downturns (Kaye 2010; Elsby, Hobijn, Sahin 2010) and that unemployment gaps between black and white workers narrow late in expansions near business cycle peaks (Couch and Fairlie 2010). This historical pattern illustrates the importance of continued progrowth policies that increase the productivity of workers and encourage further hiring of these workers.

Despite these recent improvements, the substantial gap in employment rates between those with a bachelor's degree and those with a high school degree or less highlights the need to rethink and improve our approaches to training workers so that more adults can gain the skills desired by employers in the current economy. This includes both improving the alignment of workers' skills with those sought by employers and evaluating regulations that mandate additional training for workers that employers may not otherwise require.

### ***Increasing Workers' Skills and Closing Skill Mismatches***

Even during periods with a strong labor market, some low-skill workers will be unable to find work if they lack the skills currently required by hiring firms. Other workers may simply opt against even looking for work if they perceive a skills mismatch between their current skills and those employers seek.

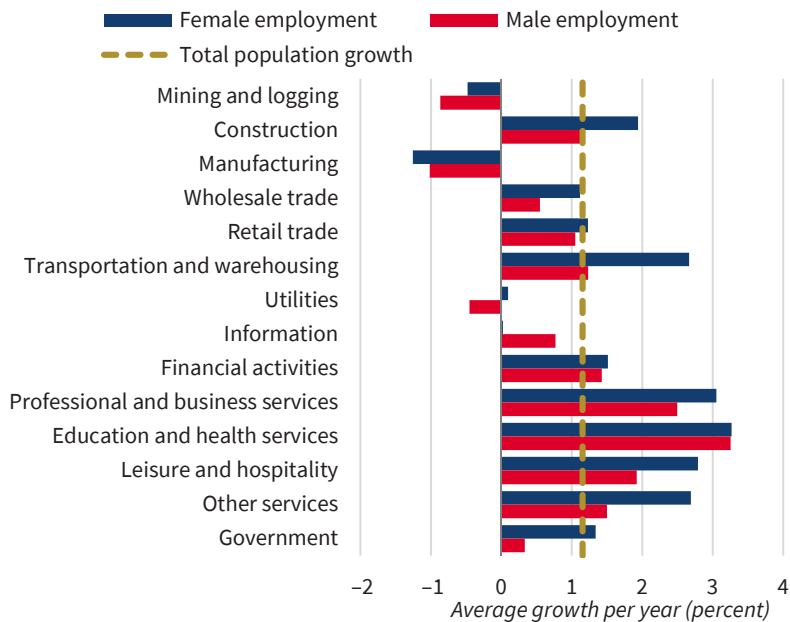
**Figure 3-13. Employment-to-Population Ratio for Prime-Age Adults by Education Level, 1992–2018**



For some workers, the skills mismatch occurs purely because they lack skills required across a range of industries. According to an international survey on adult skills conducted by the Organization for Economic Cooperation and Development (OECD 2013), a somewhat larger share of adults in the United States have lower mathematics and problem-solving skills than in other OECD member countries, while literacy skills in the United States are similar to those in other countries.

For others, however, skill mismatches occur because they were trained in an industry where the growth in employment has failed to keep up with the overall population. Figure 3-14 shows employment growth by industry since 1979, relative to the total adult population change. During this period, although several primarily service occupations—including education and health services as well as professional and business services—have expanded faster than the U.S. population has grown, others have exhibited slower growth. For workers trained in these slower-growing industries, improvements in their employment prospects necessitate either a revitalization of their current industry or retraining to allow them to transition to industries where employment is growing more rapidly. This is also consistent with the latest data on job openings from the BLS, which found that the industries with the highest vacancy rates in 2018

**Figure 3-14. Employment Growth by Industry Relative to Total Adult Population Growth, 1979–2018**



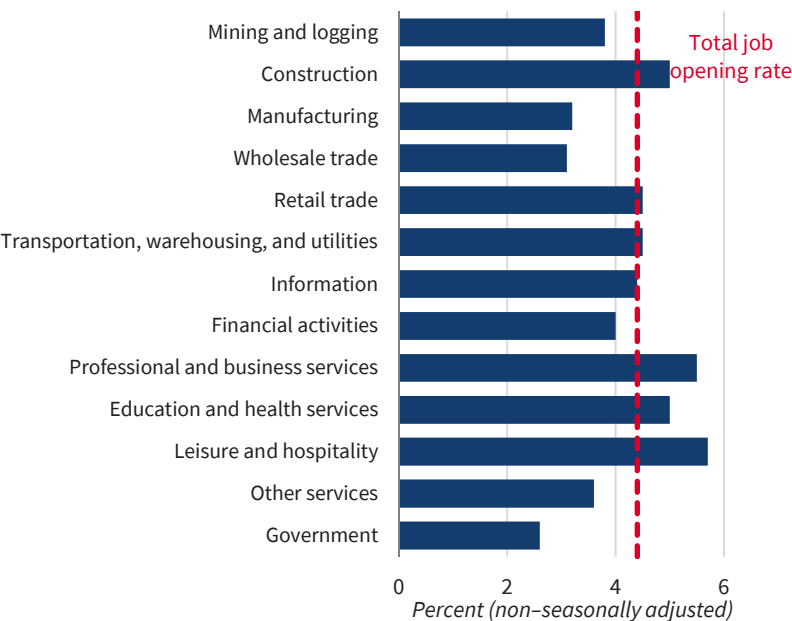
Sources: Bureau of Labor Statistics; CEA calculations.

were largely the industries that have been exhibiting the fastest employment growth in recent decades (figure 3-15).

In some instances, employers may address any skills gaps among their workers by offering training to new employees. This is especially true in a tight labor market, when there are relatively few people looking for work with the skills necessary to do the job. However, employers may be reluctant to undertake this investment if they are concerned that after training a worker, the firm will lose him or her to a rival firm.

In considering these concerns about “poaching,” economists often distinguish between general and specific human capital. General human capital includes the set of skills workers obtain that can be applied to multiple firms, whereas specific human capital is more narrowly applicable to a single firm or a narrow set of firms. For example, learning to operate a proprietary computer system would be specific human capital, but capabilities to write in a ubiquitous programming language would constitute general human capital. From an employer’s perspective, spending on specific human capital is a safer investment, because it is less likely to give workers who receive the training increased opportunities for outside jobs. However, not all skill gaps can be bridged with specific human capital, which suggests that employers individually may not

**Figure 3-15. Job Opening Rates by Industry, 2018:Q4**



Source: Bureau of Labor Statistics.

have the financial incentive to bridge the gap between the skills they require to be globally competitive and the skills the U.S. workforce possesses.

If employers will not pay to train workers in new skills, workers may engage in training themselves. According to the OECD (2013), although the United States does better than most countries in employing low-skill workers, the returns to additional skills are particularly strong in the United States. This suggests that it would be advantageous for many workers to increase their own skills, even in the absence of employer-provided training.

There is evidence that Americans do engage in more adult learning than is seen in many other countries—although adult learning rates in the United States are much higher for those who already have at least basic levels of skills than among the lowest-skilled adults. According to the OECD (2013), 40 percent of low-skilled adults participated in adult education in the year before their study, compared with 70 percent of higher-skilled adults who did so.

Although most of the benefits from reskilling programs accrue to workers and their employers, in some instances public participation in the reskilling of workers may be appropriate, for several reasons. First, although workers who are successfully reemployed will reap the majority of the resulting financial benefits, these benefits do not accumulate solely to workers. The public also stands to benefit from successful reemployment, both because

it increases public tax revenues and because it reduces reliance on social safety net programs.<sup>15</sup> Moreover, persistent unemployment can subsequently affect local communities, including a potential link to opioid use, and have intergenerational effects (e.g., decreased income) on the children of displaced workers (Charles, Hurst, and Schwartz 2018; Oreopoulos, Page, and Stevens 2008; Stevens and Schaller 2010). Many of these same considerations drive other public workforce investments: ensuring access and funding for students through grade 12, partially financing postsecondary education, and providing high-quality metrics to guide students to successful postsecondary programs. Skills training, in some ways, fits nicely into a portfolio of public investments in education and workforce development already in place. Figure 3-16 illustrates the spending by the U.S. government on labor market programs compared with other countries. This measure includes other labor market policies (e.g., public expenditures on retraining as well as on job counseling and job search assistance, as defined by the OECD) and not just skills training. Nonetheless, it suggests that the United States spends relatively little on these programs relative to that by most developed countries, especially as measured as a share of GDP.<sup>16</sup>

That adult learning rates are higher in the United States than in many other countries, and that public expenditures on adult education are lower suggests that much of the adult learning results from private sector expenses. Figure 3-17 shows that this is the case. During childhood, public education constitutes the majority of education spending. Education spending among adults is lower overall than it is for children. But this is especially true for public education spending, given that most of the spending on education for those age 30 and older comes from either private sources or from training paid for by employers. The Trump Administration has emphasized the need to redouble the private sector's involvement in increasing the skill levels of the American workforce. Through the Pledge to America's Workers, the President has secured pledges from American businesses to create enhanced career and training opportunities for 6.5 million workers. Additionally, through the National Council for the American Worker, the Administration intends to develop a national workforce strategy that increases the efficiency and effectiveness of Federal workforce programs and better cooperates with the private sector to equip workers with the skills desired by employers (see box 3-3).

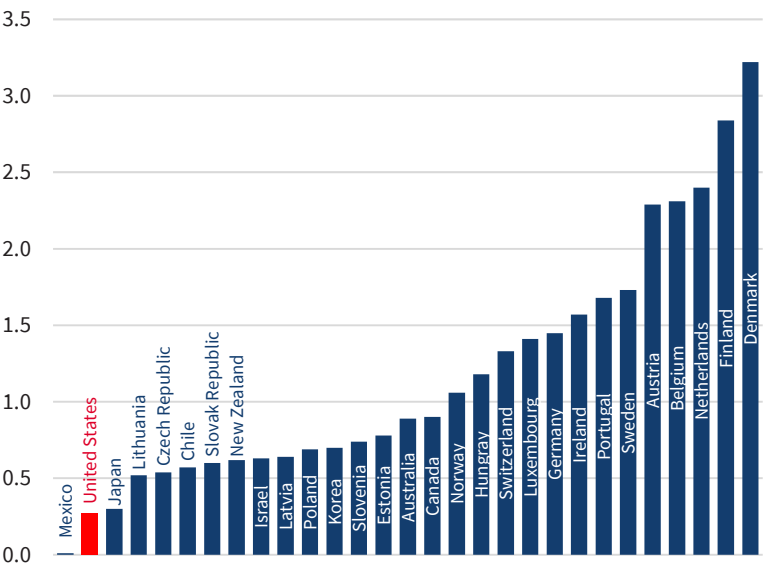
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<sup>15</sup> However, we note that workers forgo earnings as they acquire skills, which means that for a time the Treasury forgoes tax revenue and might spend more on safety net programs. This also means that minimum (cash) wage laws may act as a barrier to skill acquisition (Hashimoto 1982; Neumark and Wascher 2003).

<sup>16</sup> Of course, funding decisions should be made based on cost-benefit assessments as well as an understanding of the gaps in private labor market expenditures, and researchers have found that several European training programs do not pass the cost-benefit test (Kluve 2010; Card, Kluve, and Weber 2010).

**Figure 3-16. Public Expenditures on Active Labor Market Programs, 2016**

*Percentage of GDP*

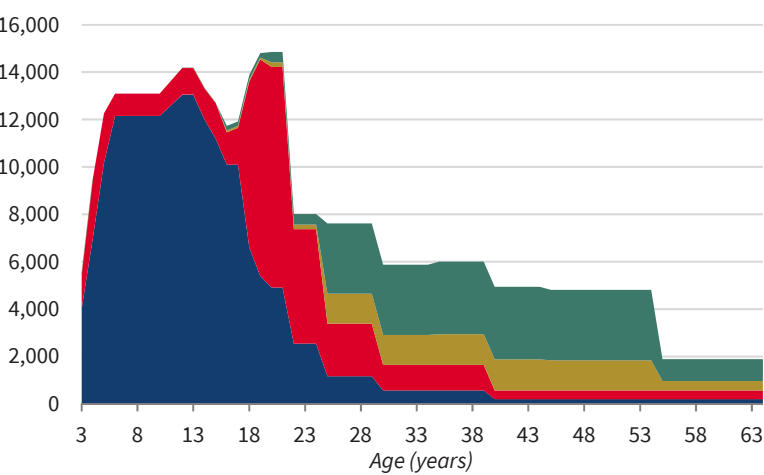


Source: Organization for Economic Cooperation and Development.

**Figure 3-17. Expenditures on Education and Skills Training by Age and Source, 2017**

- Public education spending
- Private education spending
- Employer costs, formal training
- Employer costs, informal training

*Expenditures per capita*



Sources: Organization for Economic Cooperation and Development; Census Bureau; Bureau of Economic Analysis; Georgetown Center on Education and the Workforce; CEA calculations.

### **Box 3-3. The President's National Council for the American Worker**

As technology advances and the economies around the globe become more interconnected, the skills demanded by employers change. This may in part explain why there are 1 million more job openings than job seekers in the U.S. economy. As such, it is vital for workers to keep pace with change and adapt and/or update their skill sets to meet the needs of the labor market, enabling the employment of every American who desires to work.

In July 2018, the President signed an Executive Order establishing the President's National Council for the American Worker. This council's goal is to develop a national strategy to ensure that American workers have access to innovative education and job training or retraining opportunities that will equip them to succeed in the global economy. The Federal government currently has over 40 grant programs that support workforce development. The new council seeks to make these programs more effective, innovative, and results-driven.

Another crucial aspect of the council is that it helps promote working partnerships between American businesses, workers, and educational institutions. Information gaps can hinder the economy and limit the opportunities for American workers; therefore, the council intends to link all participants in the economy, informing them about what jobs are available, where they are located, what skills are required to succeed, and how best to obtain these skills.

The Executive Order also provides for the formation of an advisory board made up of leaders in education, philanthropy, state government, and the private sector. Together with the Administration, these leaders are working toward implementing successful job-training programs, including both formal and informal educational opportunities. The Administration has also established the Pledge to America's Workers, which calls upon businesses to commit to investing in America's workers. Companies have pledged to create enhanced career and training opportunities for more than 6.5 million Americans through a variety of tried-and-true methods, such as apprenticeship programs and on-the-job training.

The President's National Council for the American Worker is devoted to helping every American worker obtain the skills necessary to succeed and to ensure that every business's needs are met, guaranteeing that every American benefits from the prosperous and booming economy that American ingenuity has built.

In considering how to encourage more Americans to seek additional skills training, it is important to consider why some individuals may not seek out further training, despite the positive financial returns it is likely to provide. In some instances, the lack of information about jobs available in the local labor market, the skills required for these jobs, and training programs that can



best equip them with these skills may be to blame. The expansion of online job aggregators has greatly eased the search for job openings, but it has not necessarily assisted workers in determining the skills required for these jobs and the specific training steps that are needed. Closely related to this problem is the uncertainty about which skills will be necessary to remain competitive in the labor market of the future.

Another reason some workers may not engage in skills training is the real or perceived costs of postsecondary education, which serves as a barrier to individuals who are not already successful in the labor market. This is a particular concern for those who are budget constrained and unable to fund training efforts while maintaining the financial stability of their households. Yet without making this investment, the likelihood that these individuals will find a way into the labor market is reduced. Predictions about the growth in jobs linked to automation, which require advanced programming and information technology skills, suggest that workers with fewer years of education (who are likely to have lower incomes) may have fewer job opportunities in the future (Manyika et al. 2017; OECD 2018b; PwC 2018). Those who are unemployed may find it even harder to reenter the job market if they do not have technological skills, although several State and Federal programs are targeted to assist them to develop the necessary skills. The State of New Jersey, for example, allows unemployment benefits to be extended to individuals who are working to complete training programs after they would have otherwise expired. Additionally, the Reemployment Services and Eligibility Assessment Program at the Department of Labor, which was funded through the Bipartisan Budget Act of 2018, provides States with funding for programs that provide reemployment services to help unemployed adults develop marketable job skills and reenter the job market more quickly.

For individuals who cannot engage in skills training programs due to financial constraints, some low-cost or no-cost models support training and retraining without imposing additional financial burdens. In particular, apprenticeships and other on-the-job learning opportunities provide a financial bridge so workers can earn a wage during their training and do not face the personal expenditure outlays and lost income associated with enrolling in formal education. Apprentices and those participating in other types of earn-and-learn opportunities undertake productive work for an employer, earn wages, receive training primarily through supervised earn-and-learn training models, and engage in related classroom instruction. Moreover, apprenticeships reduce the need for individuals to figure out on their own which skills are most desired by employers because employers help design these programs based on in-demand knowledge and skills. Additionally, apprenticeships have been shown to provide a strong boost to workers' future labor market outcomes (Neumark and Rothstein 2005; Lerman 2014). Despite these advantages, apprenticeships

make up less than 0.5 percent of the U.S. labor force, compared with roughly 2 to 4 percent in Australia, Britain, Canada, and Germany.

The President highlighted the benefits of apprenticeships and work-based learning in his June 2017 Executive Order to expand apprenticeship, including by establishing new Industry-Recognized Apprenticeship Programs (IRAPs) developed by third parties. This Executive Order also directed Secretary of Labor Alexander Acosta, in partnership with the Secretary of Commerce and the Secretary of Education, to establish the Task Force on Apprenticeship Expansion (2018) “to identify strategies and proposals to promote apprenticeships, especially in sectors where apprenticeship programs are insufficient.” The task force met for almost a year, and in May 2018 published its report, which makes a number of recommendations. The Department of Labor is now actively working to implement the task force’s recommendations and set up a new IRAP system, and other Federal agencies are doing their part to support these recommendations as well.

Another approach to increasing access to reskilling programs includes increasing the flexibility of unemployment insurance (UI) benefits for those seeking additional skills. Because UI benefits are conditional on a displaced worker not being rehired, they may discourage some recipients both from quickly finding new employment opportunities and from enrolling in an apprenticeship program, which also must pay wages. Apprenticeship programs include well-planned work-based and classroom learning. For this reason, it may be appropriate to allow apprentices to continue receiving a portion of the UI benefits they would otherwise receive to offset lost earnings while they are learning. This would further incentivize individuals to seek and participate in apprenticeships to learn new skills after a layoff.

Despite the logic of extending some or all UI benefits during periods of retraining, there is scant empirical evidence on the benefits of these programs. The State of Georgia launched a now-defunct program called GeorgiaWorks, which allowed workers to receive full UI benefits while participating in unpaid apprenticeship programs. The success of GeorgiaWorks, however, is unclear because it did not include a well-designed evaluation component. The Trade Adjustment Assistance Program, however, uses a similar model to allow for the collection of UI benefits while receiving job training and was found to be largely unsuccessful (Schochet et al. 2012; Decker and Corson 1995). This highlights the importance of ensuring that any apprenticeships are structured so workers do not only learn new skills but also that those skills will be valued in the workforce and lead to successful employment opportunities and careers.

## ***Reforming Occupational Licensing***

For a substantial share of positions, many low-skill workers must not only demonstrate to an employer that they have the requisite skills for a job but

also obtain a professional license. In the first half of 2018, just under one-fourth of all workers reported that they have an active professional certification or license. These licenses are often a requirement for employment, as over 80 percent of those with a license say that this license is required for their job. The share of jobs requiring occupational licensing has risen sharply since the 1950s, when only 5 percent of all jobs were covered by licensing laws (Kleiner and Krueger 2010).

The traditional justification for occupational licensing is to protect consumer health and safety, especially in occupations where the quality of a service provider cannot be easily evaluated by consumers (Akerlof 1970; CEA, Department of the Treasury, and Department of Labor 2015; Kleiner 2000; Shapiro 1986). Given this, it is perhaps unsurprising that healthcare practitioners are the most frequently licensed, with about three-fourths of workers reporting that they have a license. Nevertheless a sizable share of workers in a wide-range of non-healthcare occupations report having a professional license—including two-thirds working in legal professions; over 30 percent of financial specialists; and over 20 percent of installation, maintenance, and repair workers (figure 3-18). These licenses are also not limited to highly skilled workers within each occupation. As illustrated in figure 3-18, in many occupations the share of workers who have a professional license is similar when considering only those workers without a bachelor's degree.

If all these licenses were necessary for the health and safety of consumers, one would expect some uniformity of occupations requiring licenses across States. However, a 2012 study showed that the share of low-wage occupations requiring licenses ranged from 24 percent in Wyoming to 70 percent in Louisiana (Carpenter et al. 2012). One potential explanation for the difference in licensing requirements is that States are simply weighing the relative risks of unlicensed workers differently. If this were the case, then States with greater licensing requirements would license the same occupations as less regulated States while simply adding additional occupations. Instead, however, there are idiosyncrasies in the occupations that States license. For example, despite having the lowest share of low-wage occupations requiring a license, Wyoming is just one of 21 States to have licensing requirements for travel guides (Carpenter et al. 2012). Although it is possible that state-specific needs lead to these idiosyncratic licensing requirements, this suggests that other factors are likely contributing to which occupations States choose to license.

These occupational licenses come at a significant cost to the U.S. labor market by acting as a barrier to entry for new workers seeking to join a profession and, in turn, artificially raising wages in the occupation for incumbent workers. It has also been found that some state licensing boards have engaged in practices that result in unfair competition and antitrust activities. For example, in the case of *North Carolina State Board of Dental Examiners v. Federal Trade Commission* (2015), the lack of oversight by the State of North

**Figure 3-18. Workers with a Professional License or Certification, by Occupation and Education Level, 2017**



Sources: Current Population Survey; CEA calculations.

Carolina allowed dentists to successfully lobby to prevent nondentists from participating in tooth-whitening procedures, despite the relatively low risk of such procedures for patients. Though there is no clear consensus on the precise effect of licenses on compensation, recent estimates suggest a wage premium for licensed workers ranging from about 7.5 percent (Gittleman and Kleiner 2016; Gittleman, Klee, and Kleiner 2018) up to 15 percent (Kleiner, Krueger, and Mas 2011). If the wage premium from occupational licensing is entirely due to economic rents, Kleiner, Krueger, and Mas (2011) estimate that with a labor demand elasticity of 0.5, the 15 percent wage premium would reflect 2.8 million fewer jobs in these occupations due to licensing. Applying a similar calculation with the lower-end estimate for the wage premium, a 7.5 percent wage premium would reflect about 1.4 million fewer jobs if the licenses are not reflecting additional human capital and increased productivity among these workers.

State occupational licensing also reduces worker mobility because many licenses cannot be transferred from one State to another. Recognizing

that high migration is seen as a strength of the U.S. labor market relative to other countries and reflects a key way that workers can adjust to labor market shocks, economists have expressed concerns about declines in geographic mobility in the United States in recent decades (for an overview of these concerns, see Molloy, Smith, and Wozniak 2017). These declines are documented by Molloy, Smith, and Wozniak (2011) and by Kaplan and Schulhofer-Wohl (2017), who each find that interstate mobility has reached a 30-year low.<sup>17</sup> Johnson and Kleiner (2017) suggest that occupational licensing has exacerbated this decline. On the basis of their estimates, interstate migration is 36 percent lower for those working in occupations with State-specific licensing relative to other occupations. They also estimate that the rise in licensing from 1980 to 2015 can explain between 3 and 13 percent of the overall decline in interstate mobility over this time. The effects of licensing on interstate mobility observed by Johnson and Kleiner are consistent with a 2015 report by the CEA that observed substantially lower interstate mobility rates for workers in highly licensed occupations relative to those in less licensed ones (CEA, Department of the Treasury, and Department of Labor 2015).

Occupational licenses also impose an additional burden on military spouses, who move much more frequently than the general population and potentially face relicensing requirements with each interstate move. The 2016 American Community Survey indicated that working-age military spouses were seven times as likely to move across State lines in the United States as the civilian noninstitutionalized working-age population in general (CEA 2018d). Also, though the 690,000 military spouses represent a relatively small share of the overall working population, military spouses are more likely than the general population to work in an occupation requiring a license, given that 35 percent of military spouses in the labor force worked in occupations requiring a license or certification (DOD 2016; Department of the Treasury and DOD 2012).

## Employment Experiences in Rural Areas

Beyond differences in employment patterns by demographic characteristic, differences in employment patterns appear across geographies, including whether the community is in an urban or rural environment. Although there are several ways that communities can be defined as urban or rural, for the purposes of this chapter we do so based on whether or not the county is located in a metropolitan statistical area.

In general, from the early 1980s through the early 2000s, the prime-age employment patterns in urban and rural areas largely followed similar trajectories. Between the fourth quarter of 1980 and the fourth quarter of 2007, rural

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<sup>17</sup> Using CPS data, for example, Kaplan and Schulhofer-Wohl (2017) find that about 1.5 percent of people moved across State lines in 2010, down from closer to 3 percent in 1980 and over 3 percent in 1990.

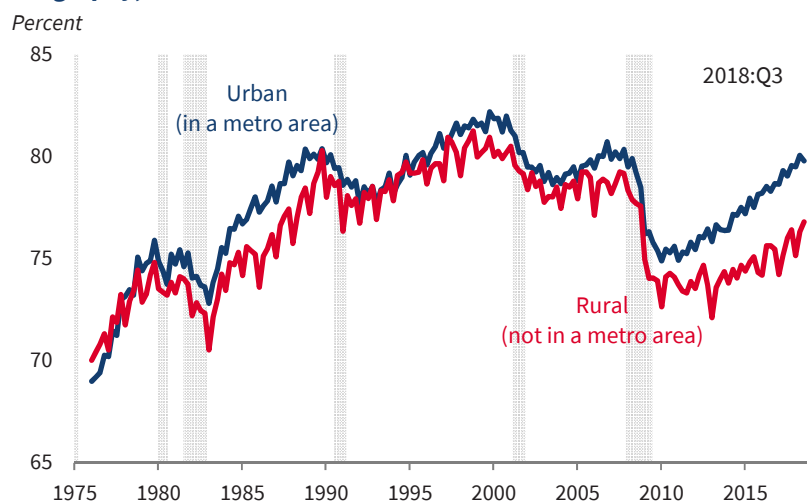
employment rates for prime-age adults rose by 5.3 percentage points—which is just slightly higher than the rise of 5.1 percentage points in urban employment rates during this time (figure 3-19). The similarities in employment patterns across these communities diverged, however, after the Great Recession. Though both urban and rural employment fell sharply in the Great Recession, prime-age urban employment rates experienced a nearly complete recovery, and are approaching their prerecession level from the end of 2007. This is despite the fact that some urban areas have restrictive zoning, which increases the costs of housing and real estate and limits employment growth (OECD 2018a).

In contrast to the experience in urban areas, prime-age rural employment rates have not shown the same level of recovery. In rural areas, as of the third quarter of 2018, the prime-age employment-to-population ratio has only risen by 2.9 percentage points since the end of 2011, and remains 2.4 percentage points below where it was at the end of 2007. This divergence is actually even greater if one looks at all adults, rather than only those of prime working age, due to the faster aging of the labor force in rural areas (USDA 2017c).

There are several reasons why employment patterns in urban and rural area may diverge. One is a purely technical explanation: that every 10 years, the Census Bureau reclassifies nonmetropolitan counties that have grown as large as metropolitan ones. Goetz, Partridge, and Stephens (2018) show that population growth in counties considered rural in 1950 is more than double that of counties considered urban in 1950. The supposedly slow historical population growth of rural areas results from the reclassification of fast-growing counties as urban—so, using definitions of urban and rural, it appears that rural areas have grown more slowly. They note that one analyst likened this to taking the best team out of a sports league each year and then wondering why the remaining teams are not performing as well as before. Although the reclassifications are based on population growth, they could also influence observed economic trends if the rural areas with stronger economic performance are more likely to undergo reclassification. However, these reclassifications only result in an implicit trend break once each decade (when the reclassification occurs) and thus should not alter trends within decades, when the definitions are stable. Hence, this cannot explain why the employment of prime-age adults has lagged in rural areas since the Great Recession after decades of similar prime-age employment rates in these two types of communities.

A second reason relates to the industry compositions across urban and rural areas. Although manufacturing represents only 6.2 percent of all urban employment, it constitutes a much larger share, 10.8 percent, of employment in rural areas. In fact—after wholesale and retail trade, education and health services, and public administration—manufacturing is the fourth-largest industry for rural employment (figure 3-20). As such, the declines in manufacturing

**Figure 3-19. Employment-to-Population Ratio for Prime-Age Adults by Geography, 1976–2018**



Sources: Current Population Survey (CPS); CEA calculations.

Note: Prime-age adults are those age 25–54 years. These data aggregate monthly CPS surveys within a quarter. Metro area definitions are subject to change over time. Data are non-seasonally adjusted. Shading denotes a recession.

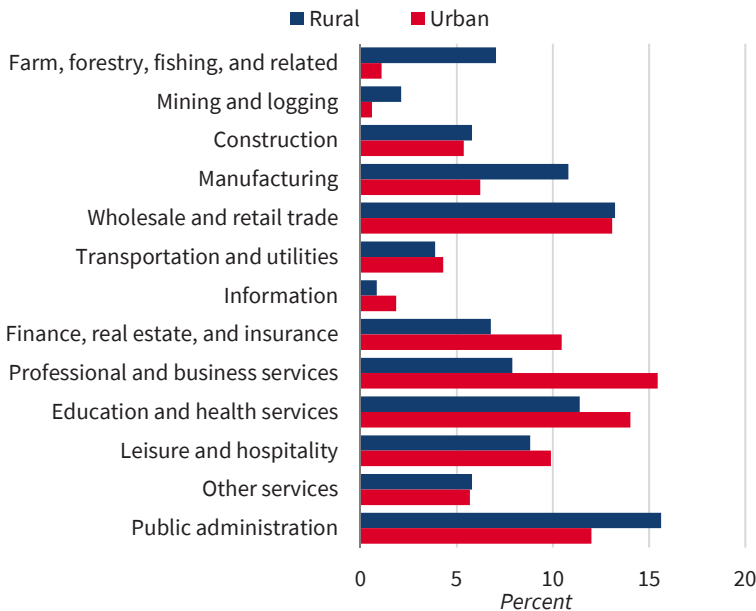
employment in recent decades have had a disproportionate effect on rural communities.

A third potential explanation relates to the differences in the characteristics of urban and rural populations. For example, education levels in rural areas have historically been lower than in urban areas, and this gap has been growing. In 2016, 19 percent of adults in nonmetropolitan areas had a bachelor's degree versus 33 percent in urban areas—a gap of 14 percentage points (USDA 2018c). Earlier, in 2000, this gap was somewhat smaller, at 11 percentage points; 26 percent of adults in urban areas had bachelor's degrees, versus 15 percent in rural areas (figure 3-21).<sup>18</sup> Recognizing that there are substantial differences in employment rates by education level, as discussed earlier in this chapter, the growing educational divide between urban and rural adults can further exacerbate their divergent employment trajectories.

One potential reason for the growing education divide is the out-migration of young adults. The exit of college-educated young adults is often identified by policymakers as an important concern for rural areas. This indicates

<sup>18</sup> One potential reason for the growing education divide is that education seems to earn a higher return in urban areas versus rural ones. A recent analysis by the U.S. Department of Agriculture (USDA 2017e) found that adults in urban areas with a bachelor's degree earn \$70,146, versus \$51,996 in rural areas.

**Figure 3-20. Industry Employment by Geography, 2017**



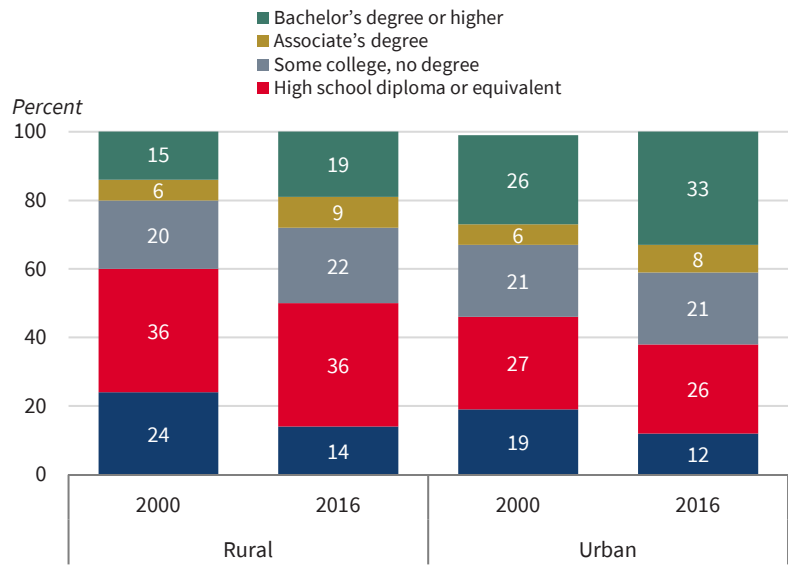
Sources: Bureau of Economic Analysis; CEA calculations.  
Note: Metropolitan area definitions are subject to change over time.

that the problem may not be so much the education level of rural youth but their retention once they complete higher education. Reichert, Cromartie, and Arthun (2014) found that geographically challenged rural areas are particularly dependent on young adults who decide to move back to their rural communities. Fiore and others (2015) found that the cost of living and strength of the local economy were of primary importance in persuading rural youth in Iowa to return. In a survey of young adults from a sampling across the rural United States, Reichert, Cromartie, and Arthun (2014) find that deciding to return to the rural community of their raising is tied closely to place and personal ties maintained with their home community. Returnees sometimes were able to return because they were able to work remotely. They also returned to become part of both farm and nonfarm family businesses.

Finally, though not directly related to the growing employment gap between urban and rural areas, an important component of rural economies that cuts across many sectors is self-employment or entrepreneurship. Numerous analyses have shown the importance of entrepreneurship for the economic health of rural areas. Rupasingha and Goetz (2013) provide strong empirical evidence that higher self-employment rates in rural counties are associated with increases in income and employment and with reductions in poverty rates. Self-employment is also particularly important for rural



**Figure 3-21. Educational Attainment in Rural versus Urban Areas**



Source: Department of Agriculture.  
Note: Metro area definitions are subject to change over time. Data may not sum to 100 due to rounding. For full details, see USDA (2018c).

communities, because the rate of self-employment in rural areas exceeds that in urban environments (Wilmoth 2017).

Goetz and Rupasingha (2009) found that greater self-employment growth was associated with higher shares of construction and services employment. Also, self-employment and entrepreneurship are enhanced when rural areas are close to growing, small metropolitan areas (Tsvetkova, Partridge, and Betz 2017). Larger increases in self-employment growth were also associated with more females in the labor force. But more retail employment in a county was associated with smaller increases in self-employment over time. Goetz and Rupasingha (2009) also used the Economic Freedom of North America Index to evaluate the effect of government policies on proprietorships. This index measured the extent of restrictions on economic freedom. Not surprisingly, more economic freedom is associated with higher rates of business formation.

Self-employment opportunity goes hand in hand with the return of young adults who left to pursue higher education. Reichert, Cromartie, and Arthun (2014) report that those who return to rural communities contribute to economic growth, often through entrepreneurship. Policies that promote small businesses and self-employment could encourage the return of young adults to their home communities. Their return then enhances economic growth and

strengthens rural economies, which can further encourage the return of more young adults.

Farming employs a shrinking share of the labor force in rural areas. In 2015, 6 percent of rural employment was directly in the farming sector. Agriculture and related industries made up 11 percent of U.S. employment in 2017, but not all in rural areas. With just over 2 million farms, many rural residents live on farms (USDA 2018b). Small family farms, often with a nonfarming occupation, make up nearly 90 percent of the 2 million farms but only produce about one-fourth of the output (Burns and Macdonald 2018).

Though farming reflects a smaller share of the rural labor force than it once did, the rural manufacturing advantage in part comes from closer proximity to raw materials, including those grown or raised on farms. For example, food manufacturing is prevalent in rural areas because of the proximity of raw products to process—making up 18 percent of all rural manufacturing employment. Similarly, 7 percent of wood products manufacturing is in rural areas, which is consistent with the closer proximity to inputs into this manufacturing process. However, between 2001 and 2015, the decline in rural manufacturing employment was widespread across manufacturing sectors. During this period, employment in every manufacturing sector except for tobacco and beverage manufacturing declined in rural areas (USDA 2017d). This highlights the importance of policies targeted at revitalizing manufacturing generally for the economic health of rural communities.

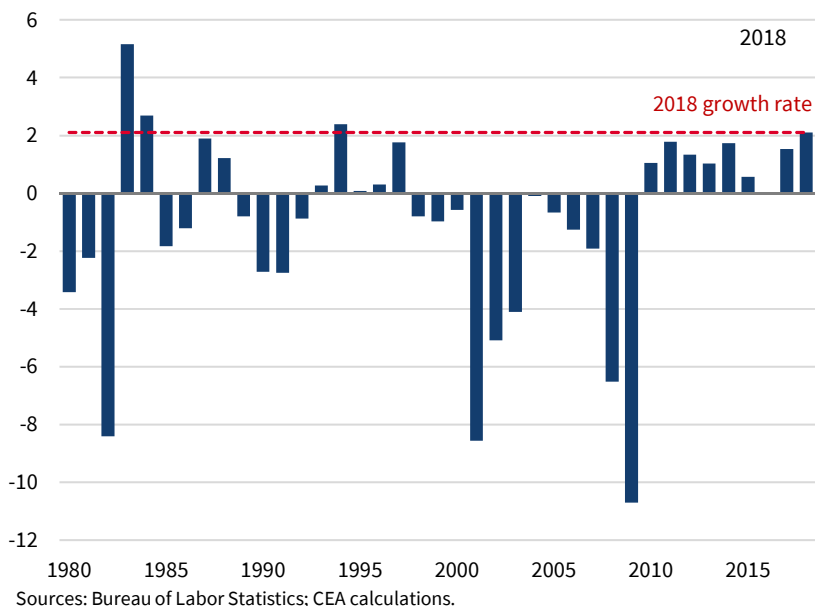
### *Policies to Enhance Rural Communities*

Recent policies of the Trump Administration have been particularly beneficial to these rural communities. These policies include efforts to revitalize industries that are disproportionately located in rural communities; supporting small businesses and entrepreneurship; and promoting economic development in less developed areas through Opportunity Zones, including in many rural communities.

One component of revitalizing rural areas involves restoring the manufacturing industries that have been languishing and losing jobs in recent decades. Although manufacturing jobs are important for both urban and rural communities, the larger share of rural employment that is in manufacturing industries means that these jobs are particularly important for rural communities (USDA 2017a). Reflecting the priority that this Administration has placed on revitalizing manufacturing, over the past two years manufacturing has experienced substantial growth. As seen in figure 3-22, in 2018 manufacturing employment grew by just over 2 percent, the fastest annual growth since 1994. And this acceleration of growth in manufacturing is part of a broader increase in employment in goods-producing industries generally. Goods-producing employment grew by at least 1 percent each year from 2011 until 2015, but in 2016 this growth stalled and the industry only grew by 0.4 percent. In 2017,

**Figure 3-22. Manufacturing Employment Growth, 1980–2018**

*Percent (annual change)*

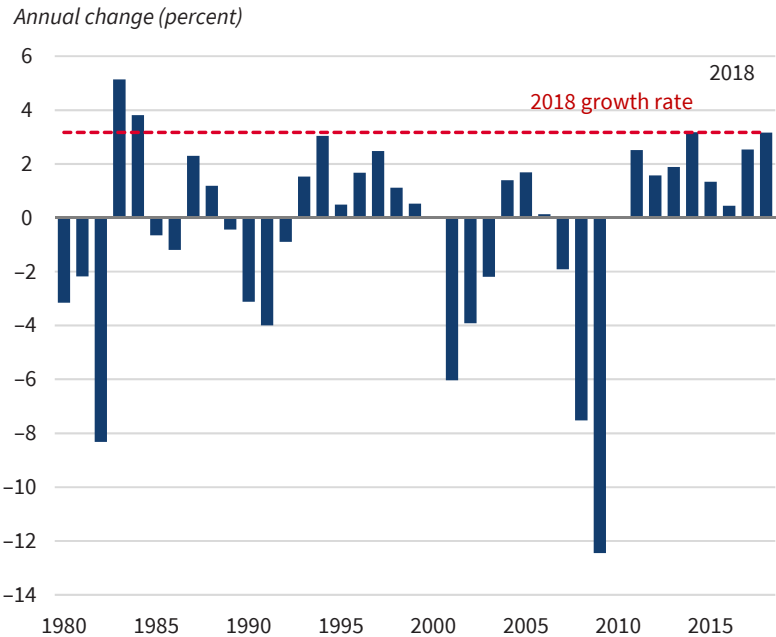


goods-producing employment gains accelerated again, and this acceleration continued into 2018 (figure 3-23). In 2018, goods-producing employment rose by 3.2 percent—its second-fastest annual growth rate since 1984.

A second set of policies that benefits many areas, but especially rural economies, is the existence and facilitation of entrepreneurship through proprietorships and self-employment. One-sixth of all self-employed adults live in rural communities, and a larger share of the rural population (6.7 percent in 2016) is self-employed than is the case in suburbs (6 percent) or center cities (5.7 percent) (Wilmoth 2017). Consequently, policies that encourage the growth of small businesses and benefit self-employed entrepreneurs have the potential to disproportionately benefit rural communities.

A major objective of the Tax Cuts and Jobs Act of 2017, as discussed in chapter 2, is to facilitate the success of entrepreneurs. Self-employed workers and pass-through entities, which make up the majority of small businesses, benefit from the act's lower individual tax rates. Most also qualify for the new 20 percent deduction for pass-through entities and will further benefit from the expanded Section 179 deduction for the purchase of business equipment. A 2018 survey of small business owners by the National Federation of Independent Businesses (NFIB 2018b) indicates that 87 percent of small

**Figure 3-23. Goods-Producing Employment Growth, 1980–2018**



Sources: Bureau of Labor Statistics; CEA calculations.

business owners recognize that the Tax Cuts and Jobs Act will have a positive impact on the economy.

Given the finding that less restrictive business environments help entrepreneurs, reducing regulatory burdens is similarly important. According to the NFIB’s (2018a) survey of small businesses, its Small Business Optimism Index has remained at near-record high levels since the Trump Administration came into office. The NFIB includes the unbundling of small businesses from taxes and regulations as factors in this surging optimism.

In addition to incentivizing small businesses by removing regulatory barriers and reducing the marginal tax rates of the self-employed and pass-through businesses, the Trump Administration is also incentivizing improvements in rural infrastructure. One such investment that can enhance growth in rural areas is increased high-speed, high-capacity Internet access (USDA 2017b). Kim and Orazem (2016) found that rural firms are 60 to 101 percent more likely to locate in ZIP codes with good broadband access. Their study, which focuses on start-up firms in rural areas, emphasizes the importance of providing adequate infrastructure to enhance the location and success of entrepreneurs. Although improved Internet access can benefit a range of communities, their study suggests that good broadband access benefits most rural areas that are close to urban areas or that have higher populations. Good broadband access enables

### **Box 3-4. Strengthening Local Economies through Opportunity Zones**

The Tax Cuts and Jobs Act of 2017 included a provision that offers tax incentives for private investment in distressed areas designated by State governors as Opportunity Zones. Under the law, taxpayers who invest their unrealized capital gains in Opportunity Zones, via so-called Opportunity Funds, can defer taxes on these gains for as long as they remain in Opportunity Funds (but no later than the end of 2026). In addition, taxpayers can avoid paying a portion of the original capital gains tax depending on how long they keep these gains in an Opportunity Fund. They can avoid all taxes on capital gains accrued based on investment in the Opportunity Fund (above the original capital gain) if they keep these funds in the Opportunity Fund for at least 10 years.

Governors designated Opportunity Zones in their States in early 2018, with their choices finalized by the U.S. Treasury in June 2018. Out of about 75,000 census tracts in the United States (each designed to contain about 1,200 to 8,000 residents), over half were eligible and over 8,700 were chosen. Among eligible census tracts, governors tended to designate as Opportunity Zones those with higher poverty rates and lower median incomes. The average poverty rate among Opportunity Zones in 2016 was 29 percent, compared with an average of 25 percent in all eligible census tracts, and an average of 15 percent across all census tracts in the country (Gelfond and Looney 2018). In addition, rural areas make up almost a quarter of tracts designated as Opportunity Zones (Economic Innovation Group 2018), exceeding the overall share of the population living in rural communities.

Although the scale and flexibility offered by Opportunity Zones are new, place-based policies to encourage investment in distressed areas are not. State and Federal Enterprise Zone programs generally offered tax incentives for businesses that located in certain areas or employed people who lived in such areas. Most studies found that Federal Empowerment Zone programs tended to increase employment and wages in designated areas, although there were no similar positive effects of State-based programs on employment (e.g., Neumark and Kolko 2010; Busso, Gregory, and Kline 2013). Another Federal initiative, the New Markets Tax Credit, is more similar to Opportunity Zones, in that it targets census tracts with low incomes and high poverty rates, and offers tax incentives for investment made in designated areas. Unlike Opportunity Zones, however, eligible investments are more restricted and must be preapproved by public authorities. The New Markets Tax Credit led to increased investment in targeted industries with some evidence of positive effects in reducing unemployment and poverty (Gurley-Calvez et al. 2009; Harger and Ross 2016; Freedman 2012).

Bernstein and Hassett (2015) suggest that the effectiveness of previous place-based policies was limited by weak or misaligned incentives for investment, overly burdensome bureaucratic requirements, and limited scope for the types of investments that could be made. Opportunity Zones

offer a means of flexibly investing in distressed areas without encumbrance by bureaucratic requirements. The scope of potential investment is large, with trillions of dollars in unrealized capital gains that could be harnessed. In addition, State and local governments have signaled their own efforts to complement Federal incentives in Opportunity Zones. At the Federal level, President Trump signed Executive Order 13853 on December 12, 2018, which establishes the White House Opportunity and Revitalization Council and directs Federal agencies to streamline Federal programs and offer greater flexibility to States to target public investment in Opportunity Zones whenever possible under current law. The large potential scale of the Opportunity Zone investment, complemented by public efforts, could unleash substantial economic growth in communities that have been most left behind throughout the United States.

people to work remotely from rural areas who would otherwise need to live closer to urban areas. With the importance of broadband access in mind, in January 2018 President Trump signed Executive Order 13821, which streamlines the process to expand broadband to rural areas (White House 2018c).

An additional priority of the Administration is encouraging private investment in areas that previously lacked private capital spending so economic growth can be spread more widely. A key component of this approach is through the creation of Opportunity Zones in the Tax Cuts and Jobs Act, which encourages a wide spectrum of investment in infrastructure in rural areas and other communities where economic growth could be enhanced through this influx of capital (see box 3-4).

Policies beneficial to rural communities are further promoted by the Strengthening Career and Technical Education for the 21st Century Act, which the President signed in July 2018, and by the Task Force on Agriculture and Rural Prosperity, which the President established in April 2017. The Strengthening Career and Technical Education for the 21st Century Act specifically benefits rural areas by allowing States to designate up to 15 percent of allocated funds to a reserve for targeted rural education and training needs. The task force similarly promotes rural development by identifying and recommending policy changes that ensure good broadband access, improve the quality of rural life, support the rural workforce, harness technological innovation, and enhance economic development (White House 2017).

## Conclusion

Given the historically low unemployment rates that were achieved in 2018, it is clear that maintaining the recent rapid pace of employment growth necessitates a better understanding of the reasons that some adults, and particularly

those of prime working-age, remain outside the formal labor market. Especially because there are already more job openings than unemployed people looking for work, continued growth of the workforce requires overcoming the barriers that have kept some adults outside it.

Fundamentally, if people voluntarily remain outside the labor market when there is a surplus of available jobs, it is an indication that they value their time spent on other activities above the amount that employers are willing to pay. As a result, central to expanding the number of people engaged in the labor force are policies that increase workers' wages, decrease the fixed costs of entering the labor force, or remove distortions that cause some whose most productive use of time is in the formal labor market to instead engage in other activities.

As outlined in this chapter, policies of the Trump Administration focus on each of these areas. The corporate tax rate reductions and expensing of business investment in equipment in the Tax Cuts and Jobs Act incentivized additional capital spending by employers, which in turn leads to higher productivity and larger wage gains. The individual tax cuts in the act similarly mean that workers keep a larger share of any wage earnings, and more potential workers will find it worthwhile to seek employment. Increased investments in human capital, along with physical capital, also increase the returns to work. There is strong evidence that wages are higher and unemployment is lower among those with higher levels of education. Efforts to increase the education and skill levels of the American workforce, including the pledges from businesses secured by the Trump Administration to train or retrain over 6.5 million workers, should raise the potential wages and employment prospects for the recipients of this training.

Further removing regulatory distortions can also increase the likelihood that the returns to work are sufficiently high to draw additional adults into the labor market. These deregulatory efforts include reducing occupational licensing, which imposes a fixed cost on potential labor market entrants, and reducing regulations on paid child care activities, which raise the costs of child care and discourage parents from seeking formal employment.

Although many policies to remove distortions and enhance workers' productivity and wages are nationally focused, there has been a clear disparity in the recovery from the Great Recession in urban compared with rural areas. This geographic divide necessitates policies focused on industries that are prevalent in rural communities so there are more employment opportunities for potential workers in rural areas throughout the country. The Administration's focus on industries, including manufacturing and mining, that are disproportionately located in rural areas, as well as place-based policies such as the creation of Opportunity Zones, have the potential to broaden the scope of the Nation's economic expansion to areas that did not experience strong employment gains in earlier years.

Although the labor market faces headwinds as members of the Baby Boom generation reach traditional retirement age, these demographic trends do not dictate that the United States will face secular stagnation brought on by slow employment growth in the coming years. Through the policies of this Administration, as discussed in this chapter, there is the potential to increase economic opportunities for all Americans by increasing the wages of those who are working and by drawing more people into the labor market than has been the case in recent years.